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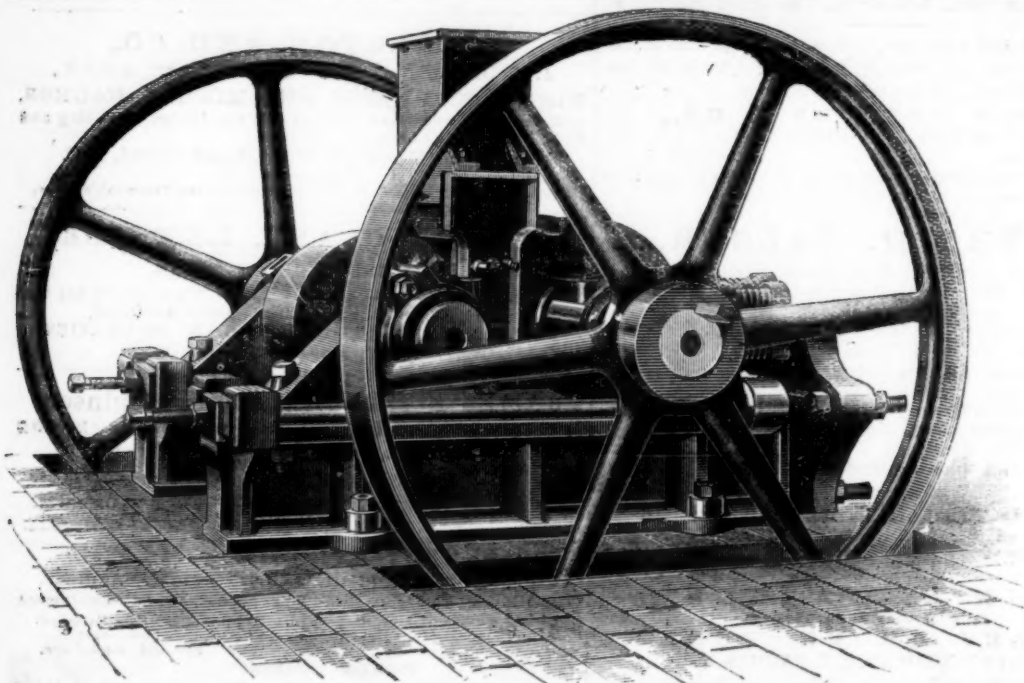
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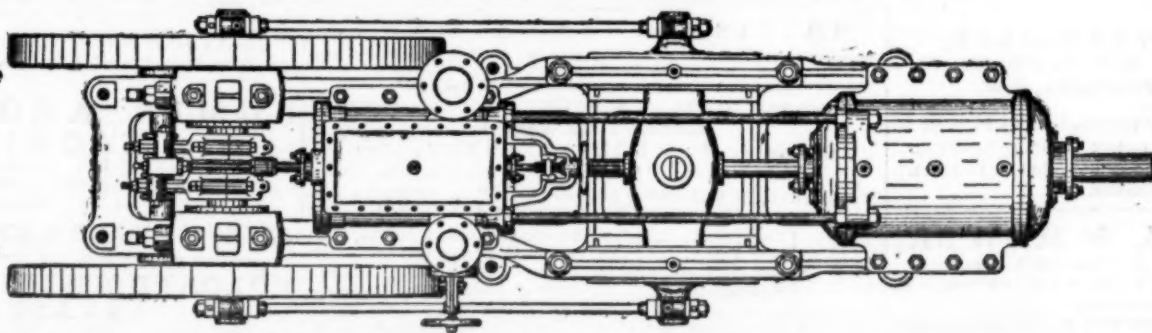
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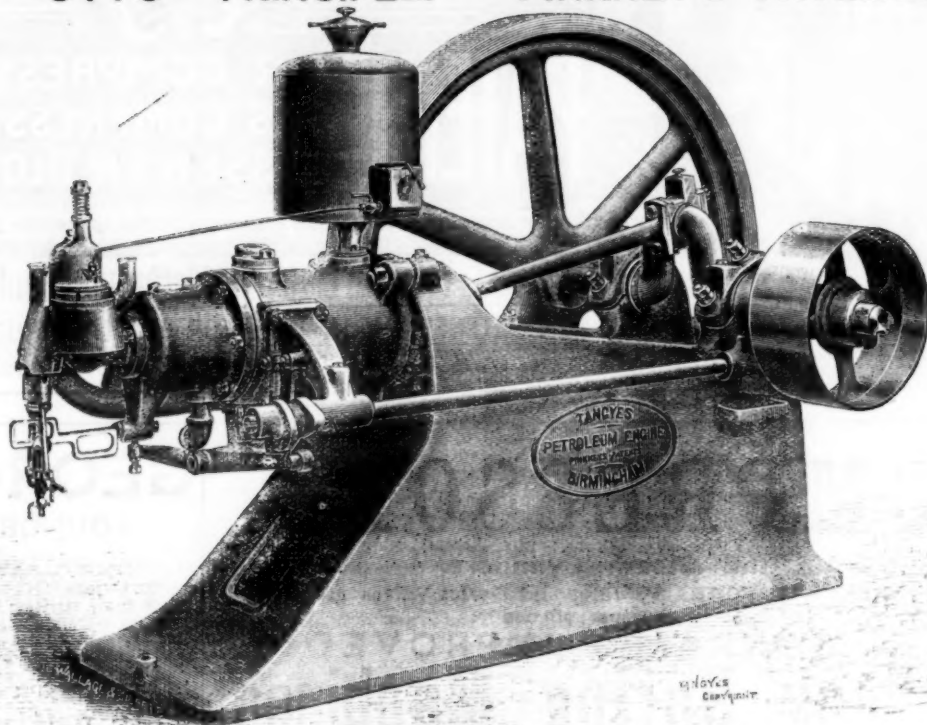
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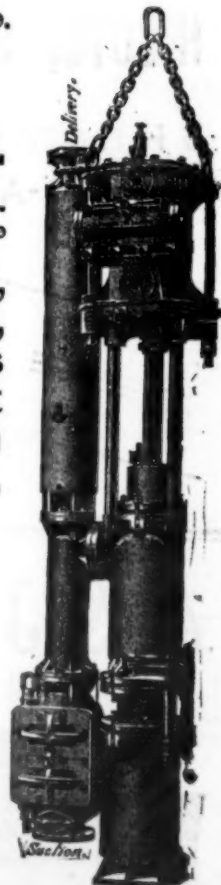
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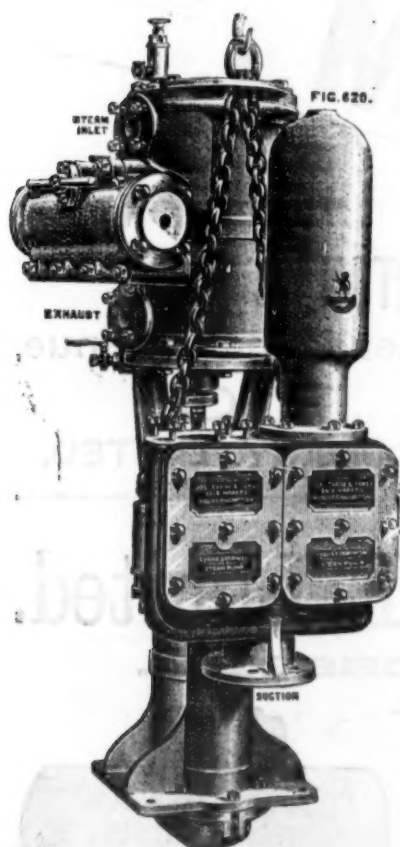


FIG. 875, "FLUOMETER"  
PATENT STEAM VACUUM  
PUMP.

The "CORNISH" STEAM PUMP.  
The "DUPLEX" STEAM PUMP.  
The "RAM" STEAM PUMP.  
The "RELIABLE" STEAM PUMP.  
"DONKEY" PUMPS.  
"HORSE" PUMPS.  
"POWER" PUMPS.  
AIR COMPRESSORS,  
&c.



"STRAIGHT-LINE"  
PATTERN  
SINKING PUMP.



GRIF "PATTERN"  
"CORNISH"  
SINKING PUMP.

CULWELL

WORKS,

# WOLVERHAMPTON.



**WALKERS' PATENT INDESTRUCTIBLE VENTILATING FANS FOR MINES, TUNNELS, &c.**  
 CONSTRUCTORS OF THE VENTILATING MACHINERY AT THE SEVERN AND MERSEY TUNNELS.

**PATENT ANTI-VIBRATION SHUTTER**  
 Applicable to all enclosed fans

**BROTHERS**

**Engineers, Pagefield Ironworks, WIGAN.**

**WALKER PATENT**

**AIR COMPRESSING ENGINES  
 GAS COMPRESSING ENGINES  
 BESSEMER BLOWING ENGINES**

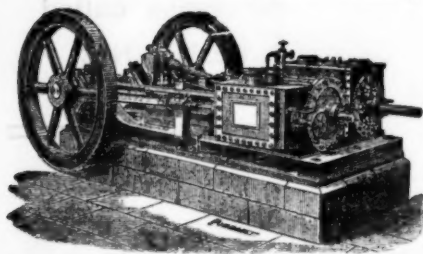
upwards of 400 of the above now AT WORK indicating in the aggregate 150,000 Horse Power

**Fisher & Walkers' Patent Friction Clutch & Underground Haulage Machinery**  
 THIS GEARING IS NOW EXTENSIVELY IN USE FOR HAULAGE PURPOSES. \* \* \*

The objects attained are SIMPLICITY, ENDURANCE OF THE MACHINERY AND ROPES with a MINIMUM EXPENDITURE OF POWER.

## AIR COMPRESSORS

With Compound Air and Steam Cylinders,  
 Fitted with SCHRAM'S Inlet and Outlet Valves giving the greatest efficiency.



### SCHRAM'S IMPROVED Rock Boring Machines.

Supplied to the Indian, Colonial, and other Governments.  
 2500 IN USE in all PARTS of the WORLD.

### DIAMOND PROSPECTING DRILLS.

### "OPTIMUS" COMPOUND ROCK DRILL.

(P. J. OGLES PATENT.)

Consumes 40 per cent. less Compressed Air than any other Drill at the same time giving the most effectual results.

ESTIMATES AND FULL PARTICULARS ON APPLICATION.

**RICHARD SCHRAM & CO., 17a, Great George Street, Westminster, S.W.**

TELEGRAMS: "SCHRAM, LONDON," A1, A.B.C. and The Engineering Telegraph Codes Used.

## GEORGE GREEN, FOUNDRY, ABERYSTWYTH.

SILVER MEDALS AWARDED AT THE ROYAL CORNWALL POLYTECHNIC, 1872 & 1876; GOLD MEDAL AWARDED AT THE GREAT INTERNATIONAL MINING EXHIBITION, CRYSTAL PALACE, 1890.

ONLY AWARDS GIVEN FOR CONCENTRATION PLANTS.

### GREEN'S LATEST IMPROVED Self-Acting or Automatic Ore Dressing Machinery.

A Special Plant, on a reduced scale, has been erected at the Works by which samples of METALLIC ORES up to Five Ton may be treated, and the commercial value determined. In this way the most suitable arrangement of Plant is ascertained, a considerable advantage to intending Purchasers of Crushing and Concentrating Plant.

**GOLD STAMP AND OTHER MILLS.**  
 Estimates, Catalogues, and Full Particulars on Application.

Telegrams—Green, Foundry, Aberystwyth.

## For PURE ALUMINIUM

98 to 99½ per cent. (98 per cent. minimum guaranteed) in

### INGOTS, STICKS, & ROLLING SLABS;

ALSO FOR

SHEETS, &c., AND  
 FERRO-ALUMINIUM.

# ALUMINIUM.

APPLY TO

**HENRY R. MERTON & CO.,**

2, Metal Exchange Buildings, Leadenhall Avenue,

**LONDON, E.C.**

AGENTS FOR THE BRITISH ALUMINIUM COMPANY, LIMITED.

## A. & J. STEWART and CLYDESDALE, Limited.

**Glasgow, Coatbridge, and Mossend.**

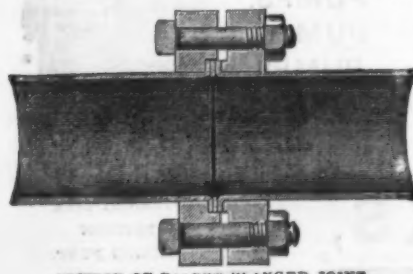
WROUGHT IRON WELDED TUBES and FITTINGS for GAS, WATER, and STEAM.

Light Lap-welded Wrought-iron and Steel Tubes  
 (SPECIALLY ADAPTED FOR MINES).

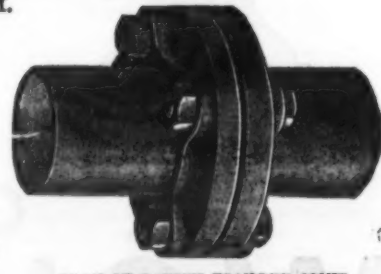
With Patent Flanged Joints (as illustrated) for the Conveyance of Water, Steam, and Air, at High and Low Pressures.

LAP-WELDED IRON AND STEEL BOILER TUBES  
 FOR LOCOMOTIVE, MARINE, AND OTHER MULTITUBULAR BOILERS.

**STEEL & IRON PLATES FOR BOILERS, BRIDGES, &c.**



SECTION OF PATENT FLANGED JOINT



PLAN OF PATENT FLANGED JOINT.

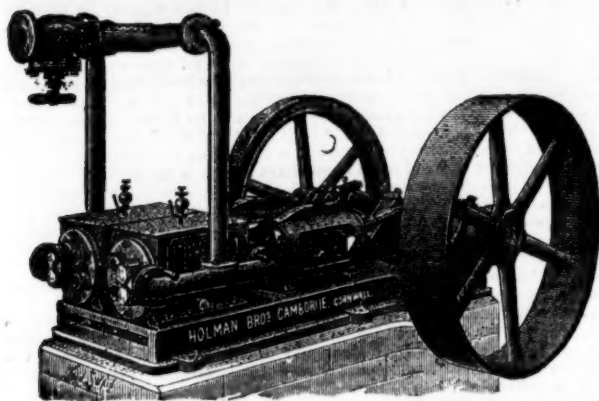
Head Offices: **41, OSWALD STREET, GLASGOW.**



# HOLMAN Bros., Camborne, Cornwall.

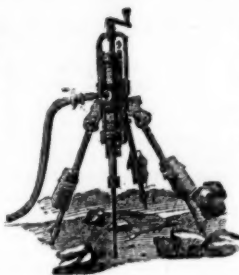
ESTABLISHED 1839.

**Patentees and Sole Makers of**  
**"THE CORNISH" ROCK DRILL and "THE CORNISH" COMPRESSOR.**



FIRST  
SILVER MEDAL,  
Highest Award,  
Mining Institute  
Contest, 1881.

Three Makers  
represented.



FIRST  
SILVER MEDAL  
Highest Award,  
Royal Cornwall  
Polytechnic  
Jubilee Exhibition  
Contest, 1882.

Five Makers  
represented.

AWARDED SILVER MEDAL INTERNATIONAL  
INVENTIONS EXHIBITION, 1885.

## RECORD OF WORK DONE

At Botallack Mine, St. Just, Cornwall, **TWELVE MEN** with **TWO** new Patent **CORNISH ROCK DRILLS** drove, sunk, and rose **288 FATHOMS** in **12 MONTHS**, equal to five times the Speed of Hand Labour

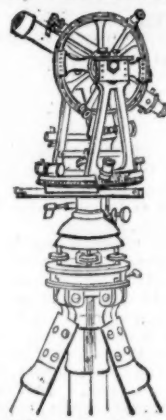
At Wheal Grenville Mine, Camborne, Cornwall, **SIX MEN** with **TWO** new Patent **CORNISH ROCK DRILLS** started from the **150 FATHOMS** level and put up in **EIGHT MONTHS** a **11 FEET** by **5 FEET PERPENDICULAR RISE 46 FATHOMS 5 FEET 6 INCHES**, and about midway drove **FATHOM 5 FT.** No communication of any kind was effected until holing to the Shaft brought down from surface.

Estimates for **ROCK BORING PLANT** and **GENERAL MINING MACHINERY**  
on Application.

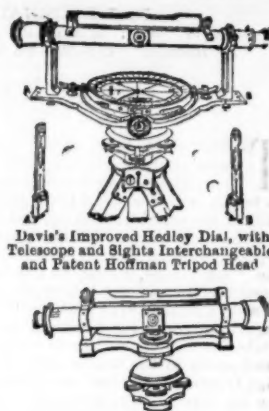
London Offices: 7 and 9, LEADENHALL BUILDINGS, E.C.

# JOHN DAVIS AND SON.

ALL SAINTS WORKS, DERBY;  
118, NEWGATE STREET, LONDON.



Transit Theodolite with Patent  
Hoffman Tripod Head, and  
Trough Compass.



Dumpy Level with  
Hoffman Patent Tripod Head.

**MINING, SURVEYING, AND  
ENGINEERING INSTRUMENTS.**  
THEODOLITES. LEVELS. TACHEOMETERS.

Davis's Improved Hedley Miners' Dials, with  
**HOFFMAN PATENT TRIPOD HEAD;**  
AND ALL DESCRIPTIONS OF MATHEMATICAL AND  
MINING SURVEYING INSTRUMENTS.

Revised Illustrated Catalogues Free to any Part the World.  
SECTION (A) MATHEMATICAL DEPARTMENT AND SAFETY LAMPS  
SECTION (B) ELECTRICAL DEPARTMENT.

Gold Medal Awarded Mining Exhibition, 1890.  
A. B. C. CABLE CODE, 4TH EDITION.

Jeffrey Electric Coal Cutter and Drill may be seen at work in the  
Model Mine, Cardiff Exhibition, Instruments, &c., Stand No. 315.

**AWARDS:** CRYSTAL PALACE, 1890; TASMANIA, 1891; KIMBERLEY, 1892.

# CONCENTRATION.

The Clarkson-Stanfield Ore Reduction Co. (Limited).

In the CLARKSON-STANFIELD process of Concentrating Refractory and Complex Ores no water is required; dust is reduced to a minimum; the loss of Mineral through water-borne Slimes is obviated.

**OUTPUT 1 TO 2 TONS PER HOUR, ACCORDING TO SIZE OF MACHINE.**

CONCENTRATOR TO BE SEEN IN OPERATION AT THE COMPANY'S ONLY ADDRESS,

**6, COLONIAL AVENUE, MINORITIES, LONDON, E.**

The Machine is superior to Sieves for Sizing Homogeneous Substances, such as Emery, Sand, and Powders, and may be used to great advantage in the preparation of Ochre.

N.B.—The owners of the Carndochan Mine, near Bala, North Wales, will, by arrangement, show their CLARKSON-STANFIELD plant working on a Refractory Low Grade Gold Ore.

## NEW PATENTS.

LIST OF APPLICATIONS for New Patents relating to Mining Metallurgic, Engineering, Railway and kindred matters, specially compiled from official sources for the "Mining Journal" by Messrs Rayner and Company, Patent Agents, 37, Chancery Lane, London, W.C., who will forward all information regarding them free on application.

- 13701 Edward Fellow Plenty, jun., and John White, Davis Hillside, Newtown Road, Newbury.—Improved steam generator.
- 13740 William Henry Clarke, 23, Southampton Buildings, Chancery Lane, London.—Improvements in or connected with apparatus for burning liquid fuel for steam generating purposes.
- 13768 William Phillips Thompson, 6, Lord Street, Liverpool.—Improvements in apparatus for fixing and supporting rock drills.
- 13778 Charles Schneider, 40, Chancery Lane, London.—Improvements in steam valves.
- 13785 William Wilkinson and George Sellers, 18, Southampton Buildings, Chancery Lane, London.—Improvements in boilers or steam generators.
- 1-797 Hillierden Bultell, Lloyd's Bank Buildings, Bristol.—An improved boring machine.
- 13826 William Johnson and Harry Walker, 1, East Parade, Leeds.—Improvements in or relating to stone and ore crushers and the like.
- 13852 Albert Francis Hall, 78, Fleet Street, London.—Improvements in direct acting engines and their valves.
- 1386 Henri Audin, 18, Buckingham Street, Strand.—Improvements in gas or petroleum engines.
- 13860 Frederick William Lancaster, 18, Southampton Buildings, Chancery Lane, London.—Improvements in motive power engines.
- 1-962 Frederick George Jones and Henry Brecknell, 64, Lawrence Hill, Bristol.—A new and improved gas or oil engine.
- 13978 Frederick Ernest Daker and John Favett, 5, Q. M. Court, Chancery Lane, London.—Improvements in or relating to steam generators and engines or motors.
- 14069 Richard Sloane Richards, 7, Cleveland Road, Ealing, Middlesex.—Improvements in the furnaces of steam generators and heating furnaces.
- 14082 Walter Fayton, 135, Sheen Road, Richmond, London.—Improvements in piston valves for motive power engines.
- 14159 John Daniel Morgan and David Gwilym Rys Ael-y-bryn Ystradgynlais, Swansea Valley.—Improvements in miners' safety lamps.
- 14175 Thom Pattinson and Thomas Slater, 111, Hatton Garden, London.—Improvements in or relating to valve gearing for steam or other engines.
- 14212 Charles Frederick Wood, 45, Southampton Buildings, Chancery Lane, London.—Improvements in explosion engines.

THE LATE MR. B. N. WORTH.—The intelligence of the death of Mr. B. N. Worth has been received in Cornwall with much regret. As a journalist he interested himself largely in the Cornish mining industry, and during the crisis of 1870, occasioned by the market being swamped by tin from Banca, he was the means of obtaining relief for the almost starving miners. Mr. Worth made very extensive enquiries into the distress, and the articles he wrote on the subject were of a wonderfully telling nature. But this was by no means the only occasion when the deceased evinced such a strong interest in the poor, and it is pleasing to note that his efforts were invariably successful. He was also the first journalist to realise the importance of publishing the details of the meetings of the Cornish mining companies in the days when these undertakings were so prosperous.

## JOINT-STOCK COMPANIES.

### NEW REGISTRATIONS.

THE following are among the joint-stock companies registered at Somerset House since our last notice:—

Aros Mines (Limited).—Registered June 25 by Ashurst, Morris, Orisp, and Co., 17, Throgmorton Avenue, E.C. Capital £150,000, in £1 shares. Objects: To adopt and carry into effect an agreement expressed to be made between the liquidators, receivers, and managers of the Quebrada Railway, Land, and Copper Company (Limited) of the first part, and this company of the other part; to acquire mines, mining rights, &c., in Venezuela, and to deal and turn to account the same in such manner as the company may see fit; and further to acquire any mines, mining, water and other rights, grants, leases, claims, concessions, options of purchase, metalliferous land, alluvial ground, mineral deposits, &c., in any part of the world; and to carry on the business of a mining, milling, smelting and metallurgical company in all or any of its branches; to lay out towns and villages, and to promote immigration thereto; to construct, maintain and work rail and tram roads, docks, piers, wharves, warehouses, &c.; to develop the resources of such lands, as may from time to time be acquired by the company by clearing, draining, planting, farming, or building thereon; as farmers and graziers, stock raisers, shipowners, merchants, &c. The first directors—of whom there shall be not less than three nor more than seven—shall be:—W. Keswick, J. G. Skelton Anderson, H. J. Wenham, and N. G. Burch. Qualification, £250. Remuneration to be fixed by the company.

Lonsdale Hematite Iron and Steel Company (Limited).—Registered June 26 by Waterlow Brothers and Layton (Limited), Birch Lane, E.C., with a capital of £75,000, in £50 shares. Object, primarily, to adopt and carry into effect an agreement expressed to be made between the Lonsdale Hematite Iron and Steel Company (Limited), henceforth known as the old company, and J. Baird, the liquidator thereof, for the acquisition by purchase or otherwise, as a going concern, of the business and undertaking of the said old company, to develop, work, and turn to account the same in such manner as the company shall deem expedient, and to carry on in all or any of their respective branches the businesses of ironmasters, colliery proprietors, coke manufacturers, brick and tile manufacturers, miners and smelters, quarrymen, engineers, steel converters, &c. The first directors—of whom there shall be not less than four nor more than seven—are J. Craig, J. Taylor, J. Baird, R. G. Udell, and W. Burnyeat. Qualification not specified. Remuneration to be fixed by the company. Registered office, the Lonsdale Ironworks, Whitehaven.

Gold Fields of India (Limited).—Registered June 25 by Dixon and Co., Savoy Mansions, W.C. Capital £75,000, in £1 shares. Objects: To acquire any gold mines, mining rights, &c., in India, and to develop, work, deal with, and turn to account the same, and in such manner as the company shall see fit; and further to acquire any other mines, mining, water, and other rights, grants, leases, claims, concessions, options of purchase, metalliferous land, alluvial ground, mineral deposits, &c., in any part of the world; to develop and turn to account the same, and to carry on the business of a mining, milling, smelting, and metallurgical company in all or any of its branches; to lay out towns and villages, and to promote immigration thereto; to construct, maintain and work rail and tram roads, docks, piers, wharves, warehouses, &c.; to develop the resources of such lands as may from time to time be acquired by the company by clearing, draining, planting, farming, or building thereon; as farmers and graziers, stock raisers, shipowners, merchants, &c. The first directors—of whom there shall be not less than three nor more than five—are to be elected by the signatories. Qualification, £250. Remuneration, £500 per annum and a percentage of the profits, divisible.

Lambton Collieries (Limited).—Registered June 26 by Crossman and Pritchard, 18, Theobald's Road, W.C., with a capital of £200,000 in £50 shares, 600 of which are 5 per cent. cumulative preference. Object: To adopt and carry into effect an agreement expressed to be made between the Earl of Durham, J. Jole, Bart., M.P., and W. J. Jole of the one part and this company of the other part, for the acquisition by purchase or otherwise, as a going concern, of various collieries in the county of Durham, lately the property of the Earl of Durham; to develop, deal with, and turn to account the said properties in such manner as the company shall see fit; and to carry on in all or any of their prospective branches the businesses of colliery owners, ironmasters, manufacturers of iron, steel, gas, coke, bricks, and tiles, culm, cinders, &c.; also as shipowners, shipbrokers, underwriters, &c. The first

directors—of whom there shall be not less than three nor more than six—are Sir J. Jole, Bart., M.P., W. J. Jole, J. Thompson, and J. Thompson. Qualification, £500. Remuneration to be fixed by the company. Registered office, East Queen Street, Newcastle-on-Tyne.

Waitokauri Consolidated Gold Mines (Limited).—Registered June 27 by Vallance, Birbeck and Barnard, Lombard House, E.C. Capital £120,000 in £1 shares. Objects: To adopt and carry into effect an agreement, the names of the parties to which are not given; to acquire any gold mines, mining rights, &c., in New Zealand, and to develop, work, deal with, and generally turn to account the same in such manner as the company shall see fit; and further to acquire any other mines, mining, water and other rights, grants, leases, claims, concessions, options of purchase, metalliferous land, &c.; to develop and turn to account the same, and to carry on the business of a mining, milling, smelting, and metallurgical company in all or any of its branches; to construct, maintain, and work rail and tram roads, piers, wharves, docks, warehouses, &c.; to develop the resources of such lands, estates, &c., as may from time to time be acquired by the company, by clearing, draining, farming, planting, and building thereon; as builders and contractors, farmers and graziers, stock raisers, shipowners, storekeepers, &c. The first directors—of whom there shall be not less than three nor more than seven—are to be elected by the signatories. Qualification, £250. Remuneration, £200 per annum each (Chairman £25). Registered office, Palmerston Buildings, Old Broad Street, E.C.

Blackett's Gold Mines (Limited).—Registered June 27 by Birbeck Barnard, and Co., Lombard House, E.C. Capital £70,000 in £1 shares. Objects: To adopt and carry into effect an agreement for the acquisition, by purchase or otherwise of the business, property, and undertaking of Blacett's Claim Gold Mining Company (Limited), and to develop, work, and turn to account the same in such manner as the company shall see fit; and further to acquire any other mines, mining, water, and other rights, grants, leases, claims, concessions, options of purchase, metalliferous land, &c.; to develop and turn to account the same, and to carry on the business of a mining, milling, smelting and metallurgical company in all or any of its branches; to construct, maintain and work rail and tram roads, piers, wharves, docks, warehouses, &c.; to develop the resources of such lands, estates, &c., as may from time to time be acquired by the company, by clearing, draining, farming, planting, and building thereon; as builders and contractors, farmers and graziers, stock raisers, shipowners, storekeepers, &c. The first directors—of whom there shall be not less than three nor more than seven—are to be elected by the signatories. Qualification, £100. Remuneration £150 each per annum (Chairman £200), with a percentage of the profits divisible.

## CONTRACTS OPEN:

FOR MINE, QUARRY, RAILWAY, AND ENGINEERING WORK, STORES, &c.

\* \* We shall be obliged by being promptly placed in possession of particulars regarding contracts open for competition, and of the results of successful tenders. In the latter case contract prices should be given.

The date given is that by which tenders must be delivered, in nearly all cases further information can be obtained on application at the addresses given. In applying for such the name of "The Mining Journal" should be mentioned as the original source of the information, concerning which further particulars are required.

### HOME CONTRACTS.

Screened Coal. July 13 (Grassard).—For the supply of 100 tons of best Whitehaven screened coal, free of cost of railway and land carriage, for the Guardians. Mr. John Kiernan, clerk, board room, Grassard, Ireland.  
 Unscreeded Coal. July 13 (Bingley).—For the supply of 2700 tons of best unscreeded gas coal and 100 tons of best canal, for the Gas Committee. Forms to be obtained from Mr. G. D. Malam, engineer, gas works, Bingley.  
 Screeded Coal. July 14 (Dalton-in-Furness).—For the supply of 550 tons of best screeded gas coal to be delivered in Dalton during one year, for the Dalton-in-Furness Gasworks. Mr. Francis H. Clark, secretary, Gasworks.  
 Canal. July 15 (Castle Douglas).—For the supply of 350 tons of canal and 150 tons (screeded) splint gas coal, delivered free at Castle Douglas Station during one year, for the Castle Douglas Gas Light Company. Mr. D. Gillespie, secretary, National Bank, Castle Douglas, Scotland.



## WIRE MINING ROPES.

THEIR TECHNOLOGY, MANUFACTURE, AND USES.

By J. BUCKNALL-SMITH, C.E.

Author of "Wire: Its Manufacture and Uses," "Underground Rope Haulage," "Cable Traction for Rail and Tramways," &amp;c.

No. V.

(Concluded from page 815.)

TURNING to some salient examples of the applications of wire ropes to mining services, and their behaviour or comparative useful efficiency when so applied, we will now pause to briefly review some of their peculiarities and requirements when utilised for winding, hauling, and driving, &c., purposes.

Reference has been previously made to the "bottom or underside" ropes of winding systems, which usually wear out more rapidly than the "top" ones, owing to the baneful effects exerted upon the structures by reverse bending stresses or influences of contra-flexure. It will be remembered that the "top" rope usually passes from the cage direct over the head pulley to the top of the winding drum, whilst the lower or underside rope runs from the cage over the shaft head pulley to the bottom side of the driving drum, so that as one cage is raised the other one is lowered in the shaft. In this way the top rope is only subjected to bending stresses in one continuous direction, whilst the bottom one is being bent in reverse directions from the  $\infty$  curvature thus necessitated. The injurious effects of pitting reverse or alternate bends in any running rope is well demonstrated by the comparatively short lives attained in these "underside" ropes, which, on an average, may be taken to be about 15 to 20 per cent less than in the case of "top" winding ropes. In arranging systems of winding, haulage, and driving, this detrimental contra-flexure of ropes should be avoided as far as possible, as obviously any degrees of alternate compression and extension of the same must more or less injure the component wires. Of course, the larger the pulleys employed, and the easier the angles of lead, the less these baneful influences will be pronounced.

The average diameters of modern colliery winding drums run from about 15 to 20 feet, but in other classes of mining work, especially abroad, the sizes are often much less and, consequently, more severe on the ropes used. The shaft head gear should be so arranged, with relation to the winding drums, that the angle of rope "lead" or working is as easy or "wide" as possible. These considerations are mainly governed by the height and distance of the pit frames from the winding engines.

The higher the winding speed the more severe is the wear and tear of the ropes. The pit head pulleys should be of the same size as the winding drums (e.g., 15 to 20 feet diameters), although, in many cases, they do not exceed 10 feet in diameter if the winding ropes used do not exceed 1 inch in diameter. The peripheral grooves of the pulleys should be turned smooth and run truly. The height from the bank to the axes of colliery head pulleys is usually 50 feet and upwards. In colliery work the mean speed of winding may be about 1600 feet per minute, and the maximum speed some 3000 feet per minute. Frequently the piston speed of such engines ranges between 350 and 800 feet per minute, the drums making some 30 revolutions per minute; the total weight of the moving parts or gear involved sometimes runs to fully 160,000 lbs., which means considerable work on the ropes. It is by no means uncommon in this class of mining operations for the cage to weigh upwards of 5000 lbs., whilst that of the tubs and coal raised per lift attains some 7000 lbs.; this involves a steam power exertion of about 12,000,000 foot lbs.

proportionate and variable dimensions of the pulleys and drums employed, as also the inaccurate manner in which engines and pit gear have been erected, as though the plumb line and spirit level were unknown appliances. The larger the diameters of the pulleys and drums used the less the detrimental bending stresses exerted upon the ropes working over the same; but in all cases they should be mounted to run truly in their bearings, otherwise there may be much injurious side friction and "mounting" of the ropes. According to some practices the diameters of the pulleys and drums are never less than 10 times the circumference of the rope to work upon them; in others, 1 foot in their diameter is allowed for each pound of rope per fathom. Scientifically considered, the gauge of the wires used in any winding rope should seldom exceed 1-800 parts of the diameter of the smallest pulley over which it has to run.

The more acute the angles of working, the more flexible should be the type of rope employed. The following may be the approximate depths of shafts at which the weights of wire ropes composed of different materials may equal their working loads or strength:—Patent cast steel ropes, 1400 yards; plough steel 2000 yards. In the majority of cases conical drums with spiral grooves are the best form for winding purposes, and by which fluctuations, in the engines, their speeds and running strains are fairly counterbalanced or compensated. In the case of ropes of ordinary construction, after their weight has been reduced some 25 per cent. by attrition or wear, the limit of safety or useful duty has been reached, whereas with ropes of the "Lang or Albert type" the safe diminution of weight may often be extended to as much as 45 per cent. of the materials of construction. The application of neutral lubricants and preservative compositions at frequent intervals is always of cardinal importance. Side friction of ropes caused by them being wound or coiled upon drums should be minimised as far as possible, and kinking carefully avoided in all cases. If the rope exhibits a tendency to run on the drum from the right to left hand, the lay of the rope used should be in the same direction, and conversely an opposite lay should be adopted if the rope coils from left to right. Wire ropes should always be stored in dry places and never placed upon the ground without some intermediate source of protection; their uncoiling should be effected from off rotary reels, so as to avoid the liability of injurious kinking. That winding ropes, fastened at one end to cages running in fixed guides and at the opposite end to the

gave the best results. Turning to the baneful effects produced by bending running ropes in opposite directions (strains of contra-flexure before referred to), the authority in question found that the life of a rope is twice as long when bent in only one direction; this fact is also supported by the writer's experience, and cannot be too strongly emphasised in connection with winding and haulage systems generally. Comparatively mild qualities of steel will be found to reveal less symptoms of fatigue than those of higher tempers.

Passing on to the frictional adhesion of the wires in roping, it may be mentioned that a well made splice of some 35 feet will present a resistance equal to the ultimate strength of the continuous part of a rope. A similar state or condition of affairs will be found to exist if all the component wires of a properly formed rope be cut through at 18 inches or so in advance of one another. Leading mining engineers have repeatedly expressed most unanimous favour in support of ropes composed of cylindrical wires all spun up in the same direction. Ropes of fancy construction have found few practical advocates. Complaints have been repeatedly raised in the profession concerning the irregular quality of wire to be found in some ropes. This should strengthen the advisability urged of purchasing from good manufacturers and paying a fair price for the roping. The component wires of some ropes have shown a variation of from 65 to 80 tons per square inch, which is an inexcusable irregularity of quality. On the other hand, the proper treatment of wire ropes is as essential to their lives as obtaining them of good quality and manufacture. Mr. Deakin's paper on "Wire Ropes," read before the South Wales Institution of Engineers, during the sessions of 1891, elicited some useful opinions and suggestions from several mining engineers of standing.

Many of the before-mentioned observations and advice given concerning the proper and favourable uses of winding ropes equally apply to those employed for driving and hauling purposes. Obviously, the variable conditions presented in different mining operations render it difficult at times to observe any hard and fast rules in winding or hauling systems, but as far as practically possible many of the previously given recommendations will repay attention. There is nothing very novel or modern to record with regard to mining haulage installations as generally used at the present time, although some of the methods adopted are unquestionably hard on the ropes engaged in their services. Beyond a few details, the systems employed are practically the same as those availed of some 30 years

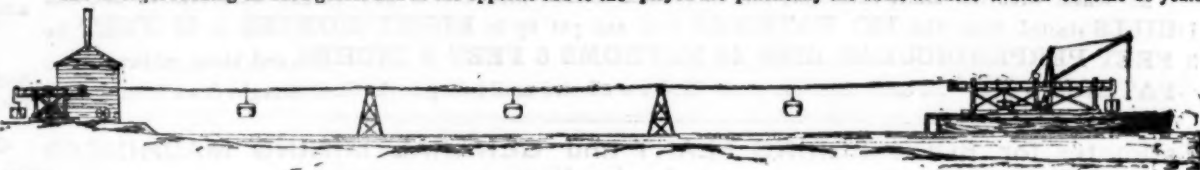


FIG. 9.

engine drums, rotate at work, seems at first thought an impossibility, but upon careful investigation and reflection, that this action does occur will be allowed; indeed, if this were not the case, the ropes would be found to have worn only on one side or in certain local places, whereas winding ropes will be seen to have become uniformly worn all round their circumferences. These revolutions are due to the strands forming a screw-like or spiral structure.

By the injudicious employment of small pulleys and drums, Mr. A. S. Biggart, whilst engaged on the erection of the famous Forth Bridge, proved by a series of valuable experiments, that not infrequently three-fourths of the ultimate strength of ropes were taxed by these injurious bending stresses. The systematic research of that gentleman, on the occasion cited, is particularly instructive, and has a most useful bearing upon mining applications. The steel wires which he used and experimented upon ranged between 75 and

ago. Many readers will doubtless remember that in 1867 a report on these matters was published by a committee formed by the North of England Mining Institute, and it is to be admitted that many of their findings hold good to-day. It may also be recalled that at the Newcastle Mining Exhibition of 1887, a most interesting and unique collection of haulage exhibits were displayed at work in the grounds. The rope account of endless haulage systems is usually more favourable than in cases where the "main and tail rope" method is employed, but obviously the former arrangement of mineral transportation is not always convenient or possible to adopt. In the days of the committee above referred to, the cost of endless rope haulage in mines was stated to be as high as 25d. per ton mile, but since that date more favourable or economical results are recorded—for example, at the Cadzow Colliery, N.B., the working of this system has been carried out at a total cost of 1-7d. per ton mile, whilst the Tredegar Iron and Coal Company have given figures as low as 1-2d. per ton mile. Naturally, the cost of any description of mechanical haulage must vary according to the fluctuating conditions and work it is called upon to contend with. The employment of haulage chains is now practically obsolete.

Where it is practical to adopt an endless rope system arranged centrally beneath the tubs with a low speed of haulage, the most economical results may be reasonably expected, but much rests with the size and arrangements of the pulleys, as also the efficiency of the gripping appliances. Endless haulage ropes arranged centrally over the top of the trucks are usually attended with less favourable results, whilst the pulleys provided at curves are cumbersome and inconvenient. Rope haulage effected from the sides of the tubs or wagons is an indifferent arrangement on account of the additional resistance to traction thrown upon the running parts. Endless ropeways require a double road or single lines with passing places, whereas according to the "main and tail" rope system only a single set of rails is necessary. The former may be run at a speed of from 4 to 6 miles an hour, whilst the latter is often worked at fully twice these speeds. Although the endless principle of traction is usually easier on the ropes, both methods fulfil certain conditions or particular functions of work. Thus the endless rope may be admirably suited to hauling small loads at frequent intervals, while the main and tail rope system would be more convenient for drawing heavy trains of tubs at considerable intervals apart. Such trains are sometimes composed of 80 to 100 trucks, each containing some 7 to 8 cwt. of mineral. The tail rope is commonly three-fourths the diameter of the main haulage rope, and both are wound too and fro in alternate or opposite directions. Naturally the repeated coiling up and unwinding of the ropes upon the engine barrels constitute serious items of wear and tear which are absent in the endless rope system. On the other hand, the primitive arrangement of the clips often employed for attaching the tubs to the endless rope are often a source of premature injury to the ropes, but then there is no reason why these gripping devices should not be improved upon so as to act less severely on them. The continuously running low-speed endless rope is usually preferable, where practical, to the intermittent high-speed deliveries of the tubs according to the "main and tail" rope system, which further spasmodically strains the machinery, gear, and plant. In cases where anything like an uninterrupted service of mineral transportation can be maintained, the balance of favour must be conceded to the endless running rope, which should be arranged to run on central track pulleys. Hauling from out of the centre line of the rolling stock must in a degree increase the tractive friction or resistance owing to the lateral rubbing action of the wheel flanges against the rails. In all cases the frequent lubrication of all the working parts is essential to easy and economical working. The ropes employed for these haulage purposes are usually about  $\frac{1}{2}$  to  $\frac{3}{4}$  inch in diameter, composed of six strands of six wires of cast steel of some 80 ton quality—this type of construction is usually found to be flexible enough, and finer wires are ill-adapted for the rough external wear encountered in such exposed and dusty situations. From that which has been already stated it will be evident that reverse bends in the ropes should be avoided as much as possible, whilst (drum or driving gear) coiling should be circumspcctly regarded and reduced as far as practical. It is obvious that according to the endless rope system of haulage the empty tubs or trucks are continuously going into the workings, whilst the loaded ones are coming out of the same on their way to the shaft, whence they are raised to the earth's surface. At one end of the installation the driving engine is located, whilst at the opposite terminus the endless rope passes round a large horizontal pulley, mounted on a movable carriage, on guides provided with suitable counterweights so as to maintain the rope taut. Bends after the form of a figure 8 should always be avoided in running ropes as highly injurious to their proper preservation and durability.

Similar arrangements of endless ropes are adaptable to the transmission of power and the operation of aerial ropeways. Such a method of conveying power from a prime-mover to the following gear of a pumping plant, located in a mine, was referred to in our last article. The application in point was at work at the Houghton-le-Spring Colliery; the rope used was  $2\frac{1}{2}$  inches in circumference and 8600 yards in length, composed of "plough" steel; the pumping gear was 38 fathoms from the surface and was run about 10 hours

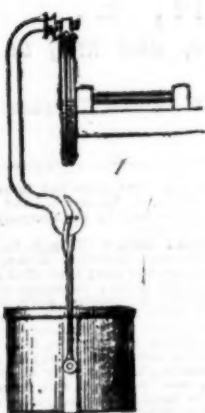


FIG. 10.

per journey, only half of which may be utilised for effective duty in raising the net load. Occasionally the variable pulls upon the rope are severe, but then, as before explained, a large factor of safety is always allowed—i.e., the maximum working load is limited to one-tenth of the ultimate strength of the rope used. Not uncommonly the dead weight of one winding rope runs to something like  $2\frac{1}{2}$  to 3 tons. Mr. H. Cheesman, in a recent address delivered by him before the Yorkshire College Engineering Society, gave the following data concerning the various strains exerted upon winding ropes, which had been arrived at by dynamometer tests. The examples are by no means extreme ones. The weight of cage experimented upon was only 29 cwt. The strain on the rope exerted by a gentle lift indicated 40 cwt.; with  $2\frac{1}{2}$  inches of slack in the rope the jerk raised the lift or stress to 55 cwt., whilst with 6 inches



FIG. 11.

100 tons quality per square inch of section; the ropes were mainly composed of 12, 19, and 24 wires to the strands, which were six in number. The ropes weighed from 2 to 4 lbs. per fathom, and had breaking strengths of 7 to 15 tons each. Mr. Biggart found that the strength of the wires separately considered averaged 10 per cent. above the aggregate tensile resistance obtained when in rope form; the variation of the strength of the component wires he gave as about 8 per cent., which seems excessive. The annealed galvanised wire he found only withstood 57 twists in 8 inches, against 178 twists in the case of plain annealed wire. The "permanent set" observed to take place in superior qualities of cast steel wire was at 80 per cent. of its ultimate tenacity, whilst the average degree of elongation was 3 per cent. The author lays stress upon the practice he followed of using pulleys fully six times the cir-

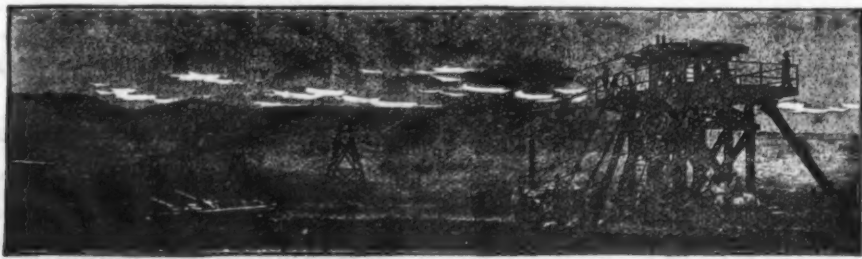


FIG. 12.

of slack the force exerted attained 88 cwt. With a foot of slack in the rope's length the strain became equivalent to four times the weight lifted, which thus reduced the factor of safety allowed to more than one-half. Therefore, considering the variable working strain to which a winding rope may be subjected it is evident that the customary margin of strength allowed is not excessive, especially when we take proper precautions for reasonable safety in working. The mining profession will be aware that the arrangements of plant and general conditions of work at our home collieries are usually superior to those sometimes existing abroad in other branches of mineral mining. At some metalliferous and other mines abroad the writer has often been astonished to see the di-

circumference of the ropes used upon them; this rule applied to highly flexible structures for crane purposes, and does not refer to winding ropes with wires of larger gauge, although the deductions to be made have useful teachings. He emphasised that as the diameters of the pulleys were increased, so the durability of the ropes used became more pronounced. Mr. Biggart ascertained that internal friction, cutting, and fatigue of the steel in the ropes played an important part in their ultimate destruction, and undoubtedly his views are well founded.

The importance of internal lubrication is also wisely accentuated. This is well borne out by the experiment that whilst an unlubricated piece of rope withstood 16,000 bends, when well oiled, a similar piece ran 38,700 times over the same pulley before rupturing. Mr. Biggart also found that the "Albert or Lang" construction of ropes



every night after coal raising had ceased. It will be recalled that the performances of one rope thus employed was some 1,500,000 tons of water lifted from the shaft, during a working life of over five years duration. This method of "tele-dynamic" transmission of power is at times economical and convenient, especially in cases where belting or shafting is prohibited by prevailing conditions or requirements. Some authorities state the system is not suitable for distances under 125 feet apart. On the Continent, at Oberdassel, Schaffhausen, Freiberg, Bellegarde, &c., important installations of the kind may be seen in operation, and transmitting as much as 3000 horse power to distances of several thousands of feet. Here one rope, in some instances, conveys as much as 300 horse power. These ropes are run at high velocities (1500 to 3000 feet per minute or more), and the amount of work transmitted is proportionate to the product of the effective tension and speed. The ratio of tensions on the tight and slack sides of the rope is usually about 2 to 1. The pulleys are commonly from 12 to 15 feet in diameter; their peripheral grooves are bedded with leather or wood packing so as to reduce the wear on the rope, and attain an efficient driving adhesion. The most economical results are obtained in systems of from 300 feet up to about a mile: in the former case the efficiency may be as high as 0.96, but over 5000 yards it falls to about 0.6. Over a mile many authorities give preference to the electrical transmission of power. A good example of cable power conveyance may be seen at Gokah, India, for driving a cotton mill of 20,300 spindles. Three turbines of 250 horse power each are actuated by a water fall of 180 feet. These motors run at a speed of 155 revolutions per minute, whilst the speed of the ropes is as high as 93 feet per second. The ropes are 1 inch in diameter, and the pulleys 11½ feet diameter. The distance from the power station to the mill is 432 feet. The strains exerted upon the ropes by the tension and centrifugal force developed have to be taken into careful consideration when designing such an installation.

Readers desirous of gleaned further particulars regarding tele-dynamic transmission of power should consult Professor W. O. Quin's (F.R.S., B.Sc., M.I.C.E.) excellent treatise on "The Development and Transmission of Power," published in 1894. As a matter of fact, it is a branch of engineering which has received but little attention in this country, and for practical data concerning the same we have to largely depend upon those furnished by Continental engineers, who have carried out some very important installations. The system in India, just referred to, was designed and executed by Messrs. Escher Wyss, of Zürich.

A modification of the "open" or "main and tail" rope system of haulage was once largely used for operating the aerial ropeways in the quarry workings of the Kimberley Diamond Mines, South Africa. In this instance the kipples or tubs were hauled up by ropes over pairs of steep inclined standing cables, actuated by winding engines located on the surface, the "empties" being returned to the mine by gravitation working. Obviously, in hauling over approximately horizontal installations (as presented in most underground or gallery systems), the full or loaded tubs are pulled to the shafts by the "main" rope, whilst the "empties" are returned to the workings by the lighter, or "tail" rope. The winding ropes used at Kimberley were chiefly of about ¾ to 1 inch diameter, and about 80 tons quality, whilst the standing ropes ranged from (say) 1½ to 2½ inches diameter, composed of steel wires of some 90 to 100 tons quality. The average speed of haulage was about 1000 feet per minute. In some cases the clear spans of the guide ropes ran to several hundred feet—i.e., 6 to 800 feet at an average inclination of about 45°. The central cores of these suspended ropes were usually formed of wire and not hemp, as rigidity was of small importance compared to the tensile strength required. A load of 16 to 32 cubic feet was generally the quantity of "soil" raised per wind—i.e., a haul of over 2 tons gross weight. The strains exerted upon this type—or like kinds of fixed ropes—may be ascertained (graphically) by drawing a vertical line from the point of the supporting rope at which the travelling line is hanging at any moment and desired to be computed. For this purpose the curvature of the standing rope must be plotted on paper to an accurate scale. Now draw a horizontal base line cutting, or tangential with the bottom curvature of the rope, termed the vertex, from the perpendicular of the suspended load, complete the right angled triangle by drawing the hypotenuse upwards and tangentially with the top curve in the rope, then the measured distance on the perpendicular, from the point of load to the base line, represents the weight or strain exerted upon the rope between the point of load and vertex of rope, plus the weight of the standing and running ropes. Similarly, upon measuring the base line of the completed triangle we may ascertain the amount of stress on the fixed rope; thus the former process gives the measure of load, and the latter the equivalent measure of strain due to the same. The greatest stress on the carrying rope is exerted when the load is at or nearest the apex of the catenary. Without the aid of a diagram, perhaps, this explanation may not be sufficiently clear to some persons; however, upon reference to the writer's treatise on "Wire, its Manufactures and Uses," all such considerations will be found to be fully set forth with reference to copious illustrations.

In the Kimberley aerial gears the buckets, provided with grooved wheels 15 inches in diameter, run on pairs of stationary guide and supporting ropes, so that in such cases the load and stresses are equally divided between the two.

Aerial ropeways for the transportation of minerals, composed of one up and down fixed ropes for carrying the loads, which are operated by endless running ropes (or some modification of the same) will be familiar to mining men as practically existing all over the world. The best known systems of the kind are those styled after the names of the inventors—Carrington, Roe and Bedington, Otto and Bleichert. Their features and merits rest with details of construction largely confined to means of attaching and detaching the load to or from the running ropes. The first-named system is known and at work in all parts of the globe, whilst the last two are chiefly known and used on the Continent. Mr. W. Carrington, M.I.C.E., of 72, Mark Lane, E.C., has made these types of ropeways a speciality for many years past, and his experiences thereby obtained are probably unequalled, certainly not excelled, by any other engineer whether at home or abroad. Upon application to this gentleman, the most exhaustive particulars concerning the systems can be gathered. Mr. Carrington's paper on the subject, read before the Institute of Civil Engineers a few years ago, will be found to contain much valuable information on these matters of aerial traction. The contractors for his work are Messrs. Bellivant and Co., which is a further guarantee for excellent materials of construction and efficient erections; indeed, their experiences in this branch of work are unique in this country. These gentlemen have jointly executed over 1000 miles of these ropeways in various parts of the world, amongst which may be cited those to be seen at work in Cumberland, Wales, Manchester, Leeds, Huddersfield, Rochdale, Newcastle-on-Tyne, Norway, Spain, France, Italy, Madras, Jamaica, Mauritius, Cape-de-Verde Islands, Hong Kong, New Zealand, Japan, Brazil, &c. Fig. 9 of the accompanying illustrations represents the general arrangement of the Carrington system of ropeways, whilst Fig. 10 gives a detail view of a kibble with carrier-gear, designed and attached in such a way as to clear the rope-supporting pulleys. Fig. 11 represents the system as applied for surmounting the steep profile of the Rock of Gibraltar, and Fig. 12 an application of an aerial tramway at Obelisk. It will be readily apparent that the system is subject to various modifications according to requirements and variable conditions of work—e.g., an endless rope may be provided for both carrying and transporting light loads at stated intervals (say 1 to 5 cwt.) at a speed of some 4 miles per hour; secondly, two fixed ropes may be arranged to carry the load, whilst an auxiliary running rope is employed to haul it along the same; thirdly, in some suitable cases the load may be run down the stationary ropes by gravitation, the same time thereby returning the empties to the filling end of the line by its descent; and fourthly, a single standing rope may be used along which the load is hauled by a running rope driven by a convenient source of power. According to the first plan named the loads hauled are comparatively light, and are distributed along the hauling and carrying rope, the pulleys and supporting posts being arranged some 150

yards apart; in this way from 100 to 800 tons of produce may be transported daily. By the second method, with fixed supporting ropes, from 500 to 2000 tons of material may be hauled per diem of 10 hours, whilst the rope supports may be located from 100 to 1000 yards apart. Suitable conditions prevailing, by the third modification the very pinnacle of simplicity and economy may be achieved, as the whole system is operated by the gravitation of the load. Lines of this description may be seen at work in the Pyrenees, at Gibraltar, and the Cape of Good Hope, &c.; in some instances the carrying rope has a clear span of 1200 yards without any support; the descending loads range between 5 and 15 cwt. The fourth system, with a single fixed rope and running haulage rope driven by a motor, may be of great capacity, and is sometimes specially suitable for working over approximately level country. By the aid of these aerial ropeways peculiar facilities and advantages are obviously afforded for economically crossing rivers, valleys, ravines, &c. In this way we may turn to applications in which 20 to 300 tons of produce are transported per working day, over lengths of line ranging from ½ to 10 miles, running over gradients as steep as one in three, and carrying loads of from ½ to 10 cwt. at a time, actuated by horse, water, steam, or gravitation power. Their cost of construction and equipment is proportionate to the work you require to get out of them, the rugged nature of the ground passed over, and the accessibility of the district. Thus a 50 ton per 10 hours line may cost from about £300 per mile to £600 a mile for a 200 ton daily service. In Bilbao about 20 per cent. of the iron ore raised is transported by such aerial systems, which is a big item when we recall that the annual production is some 600,000 tons. In Madras an aerial ropeway may be seen at work with three horizontal angles in its length of from 157 to 169°. The costs of operations per ton obviously vary according to the type of system adopted and conditions of work, &c., presented, thus on some lines the inclusive cost of transport is given as low as 1d. per ton mile, whilst on others it reaches 1s. or more, but then in the case of some isolated mines the expense of moving the ore by mules is absolutely prohibitive to a commercial success. When an endless rope is used, tension appliances are inserted in the system, similar to those devices employed on underground haulage installations operated on the same principle. In some cases the stranding ropes run from 4 inches to 5 inches in circumference and the haulage ropes from 2 inches to 3 inches in circumference, but these dimensions are entirely dependent upon the spans necessitated and weights of loads conveyed as also upon the materials used in their construction. In all cases winding and haulage ropes should be driven by drums or pulleys designed to exert a minimum, practical, side friction, bending stress, and lateral crushing action upon the former. In the detail study and general advancement of aerial systems of this type, the appreciations of the mining world are due to the commendable abilities, labour, and enterprise of Messrs. Carrington and Bellivant, who have achieved so much towards the general extension of all wire rope applications.

## MINING IN VICTORIA.

(FROM OUR OWN CORRESPONDENT.)

**The Bendigo Gold Field and English capital.—Conjuring with the name of "Bendigo."—Rich gold find at Maryborough.—A 100 ounce pocket.—New rush near Wedderburn.**

OF the Victorian projects lately floated on the London market, there are some to which no objection can be taken, whilst others, such as the Bendigo Consols Company, the Bendigo District Gold Mines Company, and the Southern New Chum Company, have been the cause of much discussion in the local Press. The shadow of mystery and extraordinary imaginative powers is over all these ventures, and if they fail to give satisfaction to the subscribers after a fair trial has been made, the blame must lie at the doors of an impetuous investing public, who take everything in a prospectus for granted without troubling to make the necessary enquiries as to the bona fides of the concerns announced. The attitude adopted by the Bendigo Press and the mining community generally towards the mines above-named, in protecting themselves from a possible want of confidence among English capitalists to invest in genuine Bendigo mines, must in the end frighten timid intending investors from touching Victorian properties. In the latter portion of last year Bendigo-papers were teeming with articles, asking the question of themselves:—"Where is Southern New Chum?" and not until the Southern New Chum Gold Mines Company's prospectus reached this side could anyone satisfactorily answer the query. The public were then informed that Southern New Chum was at Diamond Hill. Everyone looked at each other and laughed, and there the matter rested for a time, the Bendigo people seeming quite satisfied that, despite their falterings, they had not allowed a New Chum Mine to get out of their hands. Within the last few weeks the subject has been reopened by several prominent mining investors addressing letters to me, urging that the matter be made public in *The Mining Journal*. The writers complain of the misleading title of the Bendigo District Gold Mines Company in using the word "Bendigo" in connection with mines being worked by them, 30 miles distant, at Redcastle in the Heathcote district, entirely outside of the well-defined Saddle country, and not regarded as a portion of the Bendigo field. Desirous of being strengthened in a course clear to me, I communicated the facts to the Bendigo Stock Exchange, for in more than one recent instance, as the directors of the Londonderry have cause to remember, that body had exercised a restraining influence on some strange procedures which they clearly disapproved, and with active hostility soon put down, that I deemed it advisable to allow them an opportunity of expressing their opinion in the hope that they would discover some effective mode of dealing with the admitted and growing evils of the present system of putting Victorian mines before English capitalists.

After being dealt with in committee, it was decided to read the correspondence to the Stock Exchange as a whole, with the view of getting it published in the Press, and this course was adopted. The comments are before me as I write. The hon. secretary, in his official reply to me, states: "The committee wish and desire to protect all who invest in the mines of Bendigo; they will be pleased at any time to give information relating to the Bendigo mines proper. But you will readily perceive how futile any attempt of theirs would be to prevent any company promoter using the word Bendigo (as a bait) in his prospectus. The members suggest that the attention of the Press be called to the matter, so that all publicity may be given to the misleading statements."

The discussions last year, and now again revived, have produced many valuable opinions, among others that of Mr. R. L. Fedden, solicitor, of Bendigo, who in the columns of *The Bendigo Advertiser*, suggests that an association be established in London, personally supervised by Bendigo people, with the following objects:—"To establish a means of reference in London and other centres, so that the name 'Bendigo' may not be misused in floating bogus mines, or mines that have no connection with Bendigo, and so that intending investors in Bendigo gold mines may obtain reliable information concerning the district. That the district may not suffer through fraudulent ventures purported to come from Bendigo being floated in England. To arrange for the floating of sound Bendigo mines on the London market. To supervise the issue of all the prospectuses of Bendigo mines, and see that nothing but sound properties are placed on the market." This is the remedy proposed, and a sound one, worthy of consideration. Who will apply it? In doing so they will be certain to reap reward, and will be rendering the colony great service in giving life to, and becoming a mighty means of, developing this great gold field. The claims of Bendigo demand that such an agency be established. The quartz Saddle reefs of the field have yielded and are still yielding, richly. The

grand total of gold as compiled from the official records of the several amounts purchased by the Bendigo banks, won on Bendigo since it was opened in 1851 to the end of April, 1896, is 16,208,126 ounces, valued at £64,832,500.

The yields of recent years are given as follows:—1892, 203,406 ounces; 1893, 212,636 ounces; 1894, 173,288 ounces; 1895, 183,505 ounces; whilst the yields for the four months—January to April—of the present year amount to 64,528 ounces. Dividends paid in 1895 of Bendigo mines amounted to £136,282, and this was not at all a fair average year's dividend. It is beyond dispute that with the exception of the Rand and Ballarat no other field in any part of the world can show such returns; and, what is equally favourable, Bendigo mining is conducted with economy. The balance-sheets of not a few companies who are working at depths near 2000 feet and over have given instances of being able to pay dividends on a return of 4½ dwts. to the ton, and in addition of having established a reserved fund for exploratory work. The above facts are necessary in attempting to give an exposition of Bendigo's grievance and to understand their grounds for jealous alarms. They rightly complain that the opinions of local men referred to in the Southern New Chum Company's prospectus were in some cases considerably garbled, that there was no justification for the large use which has been made of the records of many famous New Chum mines in order to enhance the value of the Southern New Chum Gold Mines Company in the eyes of English capitalists, and that the work done on the lease at Diamond Hill did not warrant the promoters in associating it with such mines as the 180, the Garibaldi, Lazarus, Shenandoah, New Chum United, or New Chum Railway. In regard to the Bendigo District Gold Mines Company, it is contended that Redcastle, although in the mining district of Bendigo, is not in or near the Bendigo division, and did not send its gold to Bendigo, consequently should not be included in the Bendigo gold returns. The Bendigo Consols Company, another of last year's London "floats," is also complained of. Their property is situated at Tarnagulla, about 16 miles due west of Bendigo, entirely outside of the Saddle country, and in a distinct auriferous belt of its own, immensely rich, extending from Talbot on the south to Wedderburn on the north a vast field for prospective development, especially as regards reefs. The same contention is made here, and more so, because Tarnagulla cannot even lay claim to be in the Bendigo mining district; it is in the Maryborough mining district, with a division of its own.

So that apart from saying the Bendigo Consols gold would not be included in the Bendigo return, it cannot claim the slightest pretence of being associated with Bendigo. Whilst these mines are allowed to bear the title, the collapse of either of them would seriously affect the development of the Bendigo field proper, far out of over 700,000 acres only some 6000 acres have been systematically worked. It is inevitable that a gold field with so notable a history, and on it such boundless and incalculable resources, is certain—if allowed fair play—to receive the attention of home investors to a much larger extent than at present availed of. There are still many good properties near the Southern New Chum at Diamond Hill, lying idle, only wanting capital to start operations, but investors should absolutely eschew companies who trade on the title New Chum for mines located at this part of the field, and promoters will do well to take the hint that their operations will be closely watched. If they desire encouragement to be given to these ventures they must cease juggling with the names of well known mines. These colossal make-believes of so-called "New Chums" and "Bendigo" mines are mean and contemptible. The hatred and animosity they have produced must hasten their end, and I sincerely hope this last lesson of warning will be turned to good account. Surely it is too late in the day with the easy access of information home people have concerning Victorian mines to still go on trading on the gullibility of the English public with ambitious titles. Let the word Iohabod be written over such promoters, for if I may judge from the way in which some good mines of Bendigo are being taken to London for flotation, there will be ample opportunity for the mining investor to subscribe to concerns which are being placed on the market under the very best auspices, and with every prospect of realising the honestly expressed anticipations of the promoters.

A discovery of marvellous richness was made a few days ago in the stopes at the 300 feet level at the Sharpe and Barry Amalgamated Mine, Leviathan reef, about 2 miles from Maryborough. 200 ounces of stone was brought to Maryborough in a candle box, which contained upwards of 100 ounces of gold; in fact, there was more gold than quartz in the specimens. Since the discovery of the reef in 1890, the owners have taken out gold to the value of nearly £90,000. Although registered as a no liability company, the whole of the share is still held by the original owners, and are not quoted on 'Change. The mine has been worked from the surface to the present bottom level 300 feet, with the reef averaging about 6 feet in thickness; in places it has been taken out for a width of fully 15 feet, showing gold very freely, and the crushings have given a high yield. The find is the richest known in the district, eclipsing the sensational pocket of gold discovered in Shaw's Bob Roy Mine, White Hills, a few years ago, the specimens from which were sold for £500. It is reported that the owners of the mine have received an offer of £1000 for the specimens from a prominent West Australian speculator.

The Mining Registrar at Wedderburn officially reports to the Mines Department that an alluvial rush has taken place about 1½ mile south of Woolshed Flat, near Sailor's Gully, Wedderburn. The sinking is from 8 feet to 13 feet. There were at the time of writing about 200 men on the ground, and numbers arriving daily. They were getting payable gold of from 5 dwts. up to 1 oz. to the load. He added that there was also great excitement at Korong Vale, a few miles east of Wedderburn, in consequence of a quartz reef having been found at the point of the range running between Wedderburn and Korong Vale. Some very rich specimens have been taken from the reef, and the ground along the line has been pegged out by several parties of miners. The district is rich with reefs, and in the past have been worked with good results, but for some time has been languishing for want of capital to work them at depth. The country presents everywhere the same features as are found on some of the rich gold fields in the northern portion of the colony.

Telegraphic news has just reached Melbourne from the Mining Registrar at Omeo that a rich shoot of gold was struck on May 5 in the Omeo Gold Mines Company's claim (English company) at Long Gully, Omeo, yielding from 3 ounces to 8 ounces 3 dwts. to the ton. Considerable excitement is caused locally by the rich find.

**The MacArthur Forrest cyanide case.—Victorian Companies registered in May.—Mining leases granted in May.**

There is as yet no decision in the cyanide case; that it will be received with great interest in every mining country is obvious. An adverse decision means a probability of overthrow of the entire patent in Victoria, New South Wales, South Australia, Tasmania, New Zealand, and very possibly also of the United States patent. In *The Mining Journal* of April 11 last, a long report is given of the general meeting, at the Cannon-street Hotel, of shareholders of the Australian Gold Recovery Company (Limited), which holds the patent, and Mr. Robert Smith, J.P., the President, is reported as saying:—"In Victoria . . . our progress continues to be slow, largely owing to the conservative spirit of the members of the mining industry there, who have hitherto failed to realise the importance of cyanide in the economical treatment of their ore. We are, however, not losing sight of these fields, and the progress we are making elsewhere is bound to have its effect at no distant date." For the President (Mr. Smith) to talk in this strain, he cannot possibly understand the situation in Victoria. There are six cyanide plants in full working order, and two in course of erection. The fact of these works being in existence necessitated something being done by the company to assert their rights, but instead of asking those who are using the process to pay royalty, or bring those who may be infringing the patent before the Law Courts, the first thing we knew



the company here since the original patent was granted, was a small advertisement in the *Government Gazette* notifying their intention of applying for an amendment of the patent. Usually all patent notices appear in the daily Press, but the company in this case merely inserted the statutory notice in the *Gazette*, and one may fairly say that in 999 cases out of 1000, such notices are never seen, and if no opposition is lodged within two months from the date of publication, the application is granted. This is the practice in Victoria. Strange to say, not a person connected with the mining industry noticed the advertisement, not even the officials in the Mines Department. The first to call attention to the subject was by a question asked in the Legislative Assembly of the Premier as to what steps the Government intended to adopt to protect the mining industry in connection with the application for amendment of the patent. It is well known the question was prompted by a case patent agent. A week after the Premier replied that the Government would closely watch the interests of the mining industry in the matter. Beyond this statement, the Government has apparently done nothing, unless they are the opponents behind the hedge. Certainly there is a power behind the throne, for no person seriously takes those connected with the case as being the real objectors.

The opponents contended before the Commissioner that the inventors rushed in hot haste for patents all over the world at a time when the conception of the invention in their minds was that cyanide solutions generally possessed the desired gold extracting virtues, and that, subsequently, they found reason to discard this conception as erroneous, and substitute for it one which was not erroneous, and for which they deserve every credit, but which they did not patent, and which came into use before they sought to alter their patents by amendment. To understand the case one must remember that the words in the original Victorian specification are:—The ore or other compound in a powdered state is treated with a solution containing cyanogen. No table of strengths are given, and those who have used the process have been left to themselves to discover the proper strengths, and it is no unquestionable fact that so far as Victoria is concerned, the owners of those plants in operation here did discover by experiment, long before the application for amendment, the proper strengths to work with. The opponents—particularly that formidable expert, Mr. Turrie, who is a member of the English Society of Chemical Industry, and editor of the "Engineering Magazine," who has conducted the opposition proceedings with infinite skill and credit—did not hesitate to advance this view in their evidence, and no evidence or affidavits in distinct denial from the inventors was produced at the hearing. This point is the most noticeable feature of the case. Had the American Patent Office not refused the MacArthur specification as originally filed, and pointed out the necessity for, and insisting upon, having a statement of the proportions of cyanogen to ore found most useful; or, in other words, had the American Patent Office granted the patent without examination into novelty as England does, then the United States patent would be on all fours with the German and Victorian, and by this time would probably have ceased to exist. Referring again to the President's speech at the shareholders' meeting, Mr. Smith is in error in assuming the American decision will carry any weight in the Victorian Court. Our patent laws are totally unlike the United States; in that country the officials report on the novelty of the patent, and the fact of its being granted carries with it the stamp of novelty.

Here no such law is in force; anything can be patented or amended if no opposition is entered against it within two months of notice of application appearing in the Press. The patent is granted at the applicant's risk. The onus is put on the inventor to prove that his patent was original at the time of its being granted in any subsequent proceedings he may bring, either by way of opposing other patents which he may allege to be an infringement of his, or by injunction in the law courts restraining people from using the patent without sanction. This is the position the MacArthur-Forrest people are in according to our law. They must prove that the dilute solution which they are trying to incorporate into their patent is part and parcel of the original specification. All evidence is against them on that point. They did not discover the correct strengths until after the granting of the original patent, and a number of people are working with these strengths, and have been long before they apply to amend this patent. Hence it does not require much argument to convince the President that the American decision cannot hold good in Victoria and countries with similar patent laws. The specification in force in America is not the specification in force in Victoria. The one contains the proportions of cyanide to be used, and the other a mere outline statement. A point of great interest to chemists and metallurgists appears to be that raised by the declaration of the eminent Professor Dewar, and the reply declaration of Professor Skeel. These flatly contradict one another upon a point of the most elementary character—viz., the meaning of the word dilute. Upon the meaning of this word the case hinges to a considerable extent. If no chemists generally agree with Professor Dewar, then we would appear to have the spectacle of a renowned expert coining a new definition by affidavit. The matter requires to be trashed out. If the amendment is refused and *quid nunc* in legal matters say it will be, there is no likelihood of the case being dropped. It will be carried to the Appeal Court. I am assured on the best of authorities the patentees have £60,000 to draw on for a fighting fund, and will go on appealing to every Court until the Privy Council is reached. They may be beaten in the Law Courts, but they have good equitable claims for just consideration. It is pure nonsense to urge that the process, with the exception of the precipitation by zinc, has been known for scores of years throughout the world. The fact is clear that no person attempted to apply it in practical use until the MacArthur-Forrest discovery. Only a few years ago the hundreds of thousands of tons of tailings still lying idle on waste heaps on every gold field in Victoria were considered as an encumbrance and valueless, but, owing to the result of the operation of the process, to-day, out of 36 per cent. estimated average loss of gold in such tailings, 26 per cent. can be treated by cyanide, recovering 70 per cent. One pleasing feature in connection with the question is the thousands of pounds now being won in Victoria from waste auriferous material by those plants in operation, and this alone entitles the MacArthur people to be dealt with in a spirit of fairness. It is worth while observing that during the first six months of 1895 the Rand returned 1,095,424 ounces of gold, 781,802 ounces being the result of mill amalgamation, and 314,622 ounces being recovered by the cyanide process. It will, therefore, be seen that it was to the use of this process that one-third of the total output was due, and, taking the Transvaal as a whole, the application of the process has been to increase the golden yield to no less a quantity than 200,000 ounces per month. This should prove an object lesson to Victoria. Are considerations of this sort not to weigh in coming to a settlement with those engaged in the case, Mr. Fielstick, the defendant in the English cases, is at present in Australia, to establish large cyanide works for a European company, and the representative of the German cyanide manufacturing firm, which caused a German cyanide patent to be upset, is also in Australia. These parties are not appearing as opponents to the amendment; but what interests are behind Mr. G. G. Tarrie, the nominal opponent, is not clear. But one thing is evident—that there are many capitalist interests waiting to take instant action for the erection of additional cyanide plants in Victoria as soon as legal impediments are cleared away. Even so, the colony ought not to grudge the patentees the due rewards of enterprise.

The following new gold mining companies operating in Victoria were registered during the month of May:—Falcon's Creek, at Falcon's Creek, Walhalla, in 150 shares of £10 each. Uncle Tom, at Grant, North Gippsland, in 32,000 shares of 5s. each. Nugong Crushing and Concentrating, at Nugong, Gippsland, in 1000 shares of £5 each. Star of Erin, at Enoch's Point, in 24,000 shares of 5s. each. Sunrise, at Karabin, in 40 shares of £10 each. The Merton, at Merton, in 30,000 shares of 5s. each. Leap Year, at Woodburn Creek, in 24,000 shares of 5s. each. Steel's and Glamorgan, at

Yandit, in 48,000 shares of 2s. 6d. each. Bendigo Mining Development, at Bendigo, in 100,000 shares of 5s. each. B.B. Quartz Extended, at B.B. Creek, Walhalla, in 32,000 shares of 10s. each. Edwards and Harp of Erin, at Donnelly's Creek, in 32,000 shares of 5s. each. The Tromp's Amalgamated, at Maryborough, in 25,000 shares of 10s. each. North Tromp's, at Maryborough, in 12,000 shares of 5s. each. Paterson's Mountain Maid, at Mount Elliot, in 48,000 shares of 2s. 6d. each. Landy's Dream Extended, at Walhalla, in 48,000 shares of 5s. each. North Who Can Tell, at Maiden Gully, Bendigo, in 30,000 shares of 5s. each. The Newhaven, at Walhalla, in 30,000 shares of 10s. each. Stringer Consols, at Yackandandah, in 200 shares of £10 each. The Central, at Reefton, in 24,000 shares of 10s. each. The Kooroocheang, at Smeaton, in 60 shares of £50 each. Moonlight Junction, at Rokewood Junction, in 16,000 shares of 5s. each. Victors Quartz, at Wood's Point, in 32,000 shares of 5s. each. North Day Dawn, at Maldon, in 3000 shares of 10s. each. The Bullion, at Mornington, in 30,000 shares of 5s. each. The Rokeby, at Rokeby, Gippsland, in 24,000 shares of 5s. each. The Cathcart, at Ararat, in 30,000 shares of 10s. each. Monte Christo Reef, at Avoca, in 32,000 shares of 5s. each. The Green Hill, at Taradale, in 24,000 shares of 1s. each. The Mount Matlock, at Matlock, in 25,000 shares of 5s. each.

Silver Mining.—Buchan's Consolidated, at Buchan, Gippsland, in 2000 shares of £1 each.

Coal Mining.—Glenalvie Coal, at Glenalvie, Gippsland, in 2000 shares of £5 each.

During the month of May 120 leases for gold mining, covering 5848 acres, have been granted, and 72 miners' right claims have been registered. Of the leases taken up the following are the detailed returns:—

31 in the Bendigo mining district.

21	Beechworth	"
19	Gippsland	"
18	Balla	"
16	Castlemaine	"
8	Maryborough	"
7	Ararat	"

Several of the leases in the Castlemaine and Maryborough districts are granted for large areas from 600 to 1000 acres each. These are in deep alluvial ground for speculative purposes, with the avowed object of floating them on the London market. As no bores have yet been put down to find the leads, it is impossible to imagine what the English public are being taken for by some Victorian syndicates. However, as most people know all about their doings, there is no likelihood of a boom in this class of ventures.

Eight leases from Reedy Creek, chiefly in the hands of Mr. W. P. Jones, have gone forward to London. This is one of the neglected fields—a good record in the past, and recent rich discoveries have given an impulse to proper explorations directed by skilful miners.

### PRESENT PROSPECTS OF EMIGRATION.

THE July circulars of the Emigrants' Information Office, 31, Broadway, Westminster, S.W., and the annual handbooks, show the present prospects of emigration. There is a demand for farm labourers in the NORTH-WEST OF CANADA and in NEW BRUNSWICK, but in Ontario the local supply of men is for the most part sufficient. There is little or no demand for mechanics in any of the Canadian towns, and in Toronto especially employment is very scarce; the demand for female servants continues.

In NEW SOUTH WALES the output of gold in 1895 showed the very satisfactory increase of 35,378 ounces, as compared with that in 1894, the increase being largely owing to the number of unemployed men sent by the Sydney Labour Bureau to work on the gold fields. The production of coal in 1895 was 66,000 tons more than in 1894, but the aggregate value was less, the selling price of coal having been the lowest on record. The establishment of village settlements for the unemployed has not been encouraging, only one having met with any amount of success. About 35 branches of the Sydney Labour Bureau have now been opened in country districts; the number of unemployed, who have registered at Sydney, has slightly decreased of late. The colliery owners at Newcastle having refused the miners' demand that the hewing rate of 3s. per ton should be increased to 3s. 6d., a large majority of the men voted for a general strike, and most of the pits are now idle. The miners maintain that they are unable to exist on their present wages, whereas the colliery proprietors assert that the miners' average earnings are from 8s. to 10s. a day. Applications for homestead selections under the Land Act of last year continue to be very numerous. Considerable reductions are being made in the number of civil servants, involving a large annual saving of money.

In VICTORIA the mining industry continues to be very active, and the number of leases issued during the first months of this year was the largest on record. Masons find considerable difficulty in procuring work at the present time. The machine and implement trade, and nearly all sections of the industries working in metals, have been fully employed. The irrigation colony of Mildura is in liquidation, but it is said that the Victorian Government may assist the settlement. General female servants, able to do cooking, washing, and housework, are in good demand in Victoria, and cooks, housemaids, nurses, &c., in the larger towns. There are excellent openings in Victoria for farmers, dairy farmers, fruit growers, and wine growers, if they have a little capital, and some experience of the country.

In SOUTH AUSTRALIA there is a plentiful local supply of mechanics, and of farm and general labourers, and there is no demand for more hands. Recent returns show that the value of the imports in 1895 into South Australia was the smallest for many years, and that of the exports was considerably below the average. The decrease in the value of the exports appears mainly in agricultural produce and in minerals; in animal production there was a fair increase. The value of the manufactured articles exported in 1895 was greater than that of any previous year, and was nearly double that of 1893. In the northern territory of Southern Australia, the exports and imports in 1895 were less than those in 1894; little progress was made in agriculture and the mining industry, with the exception of gold mining, which is carried on almost entirely by Chinese, was still very small. The export of cattle to Java showed a large decrease, and the only industry which really improved was the pearl shell industry. There is no demand for more labour in the territory.

In QUEENSLAND, speaking generally, prospects are improving throughout the colony, but there is no demand at present for more hands. Agriculturalists can now obtain stevedore passages to the Colony at £12 a head, by applying to the Agent-General in London. There are excellent openings for farmers with a little capital in the sugar districts, after they have acquired some experience of the country. Female servants are difficult to obtain at Brisbane, as young women prefer to engage in the tailoring or some other trade.

In WESTERN AUSTRALIA there is a good demand for carpenters and bricklayers, and for mechanics generally. There is also a good demand for miners at £4 per week on the Coolgardie and Murchison gold fields, and at Coolgardie men competent to work on the roads (not railways) are wanted at £3 10s. a week; the demand for female servants continues.

In TASMANIA there is renewed activity in every branch of

mining, and an increase in the number of miners at work. The output of gold, silver ore, tin, and coal for the first three months of this year was in each case larger than that in the corresponding quarter of 1895, and the number of European miners has increased by as many as 700. Prospects in this industry look promising.

In NEW ZEALAND the threatened strike in the boot trade has been averted by the dispute being referred to one of the local Boards of Conciliation, constituted by the Industrial Conciliation and Arbitration Act. In the Auckland district work generally is plentiful, especially in the gold mining industry, which continues to show great activity. The building trade has shown some improvement, and good artisan labour (except in the engineering trade, which is dull) is well employed at full rates of pay. The timber mills also continue to be worked full time, and there is good employment in the bushes. In Napier, Wanganui, Wellington, Christchurch, and several other towns in New Zealand the building trades have been busy, and the engineering trade has been very busy at Greymouth. But, speaking generally, the demand for labour is fully met locally, and at this—the winter—season there is no demand for more farm hands or general labourers.

In CAFE COLONY there is no demand for artisans on the railways, but there is a good demand at the present time for experienced railway clerks, goods' clerks, shunters, and foremen accustomed to single line working; there is no demand for more mechanics generally throughout the colony, nor for farm labourers, coloured labour being employed on farms. In Natal the demand for labour is fully supplied locally.

The San Francisco Consulate, in its last report, again warns British subjects not to invest in land in CALIFORNIA until they have been there sufficiently long to enable them to acquire some knowledge of the conditions of the country, and to form an opinion as to the prospects of success. The question appears to be of much importance, in view of the sad fate of many who, relying on the specious prospectuses published by certain unscrupulous owners of land, and the delusive promises of success held out, have invested their capital and labour in fruit and other farms, and have found themselves involved in ruin.

## MEETINGS OF MINING COMPANIES.

### HANNAN'S GOLDEN PEBBLES, LIMITED.

THE statutory meeting of the shareholders in the Hannan's Golden Pebbles (Limited) was held at the Cannon-street Hotel, on Monday, Colonel R. PARRY NISBET, C.I.E., the Chairman of the company, presiding.

The SECRETARY (Mr. Richard L. Hobbs) read the notice convening the meeting.

The CHAIRMAN said: Gentlemen—This is, as you are aware, the meeting which every company registered under the Act is bound to hold within four months of its formation. There are no accounts to present and no resolution to move, but your directors are delighted to meet you here to-day to give you all the information they possess with regard to your property and its latest development. The company was registered on March 13, 1896. The property consists of three leases containing together 60 acres or thereabouts, situated at Hannan's, on the East Coolgardie gold field, Western Australia. The whole property has been duly transferred to the company, and has been registered in Western Australia, and we have a registered office in Perth. The nominal capital of the company is £160,000, in shares of £1 each, of which 129,586 shares have been issued. The property was personally selected by Mr. George Gray, who, while he was in this country, told me a great deal about it, and that he was convinced of its value, and that it would prove eventually one of the best mines in the Hannan's district. I hope I am betraying no secrets when I tell you that the property was intended by Mr. Gray for a very powerful promoting company, for whom he had secured, undoubtedly, some very good things, and, therefore, I think we were very fortunate in being in front of that company about this property, and in securing what will, I think, undoubtedly prove, if Mr. Gray's reputation as an expert is what his friends believe it to be, a very valuable mine, on specially favourable terms. While we are fortunate, I believe, in the property, we are still more so in being able to boast the services of Mr. George Gray as our manager and chief engineer in Western Australia. There is no one in that colony, or in any part of the mining world, whose character as an expert and good judgment, or whose industry, resource and ability stands higher to-day, or has been proved more reliable and trustworthy than Mr. George Gray. It is well to have an adviser and manager of such a calibre as his, and especially so in a business, always more or less speculative in its result, as the development of a gold mine is bound to be, but a speculation that becomes in our case reduced as near certainty as possible, when a man like Mr. George Gray congratulates you on the possession of a property of permanent depth and value, and his opinion is supported by another engineer so eminent as Captain W. O'Leary, the general manager of Hannan's Oraya, Brookman's Boulder, and several other companies of their stamp and character. Before Mr. Gray left England on his return to Western Australia, he was very urgent for the early construction and dispatch of machinery and reduction works for your mine, such as he had himself ordered for the Associated and Hannan's Proprietary Development Companies. Your directors, therefore, lost no time in ordering such machinery, and have done all in their power to press forward its construction and shipment, after the whole had been examined and passed by the well known engineering firm of Messrs. John Taylor and Sons. You will, I hope, be well satisfied if I read you an extract with regard to our machinery from a letter received from Messrs. Fraser and Chalmers, to whom the order was entrusted, under date July 2. They wrote:—"We have pleasure in stating that by the 11th everything will be either shipped or on board steamer. In addition to the shipment by the s.s. *Port Stephens*, the Huntington mill and the Dodge crusher, &c., have already left per s.s. *Ootzing*. The s.s. *Port Hunter* will take the Ball mills and some other items, and by the *Glaucous*, sailing 15th inst., the boilers. Iron buildings and ore bin frames will be shipped. Everything is now complete, and by the end of this week will be ready to be on the move. We assure you we are sparing no effort to expedite matters." I think we may be quite certain that, as the railway will no doubt be open to Hannan's by the time this machinery reaches Australia, Mr. Gray will lose no time in getting it up from Fremantle, and erecting the mill with all possible dispatch. I think, therefore, that, barring accidents, we may expect to be crushing possibly by Christmas or certainly a little later, and this should be satisfactory to everyone. I have detained you too long, but before I sit down I would like to read to you a cable from Mr. George Gray, giving you his very latest information regarding your property. This cable is dated June 29, and is as follows:—"Pebbles. There are five shafts on the property on the line driven on the course of the lode at a depth of 60 feet, so as to connect shafts; practically have been obliged to stop sinking because of inflow of water; steam pump and hoisting works ordered; ground being prepared for them, and the reduction works ordered in England; bulk samples from surface 60 feet to the south of No. 4 shaft went 4 ounces 13½ dwts. per ton; to the north of shaft 1 ounce to 2 ounces of gold per ton of 2240 lbs.; samples taken from other places also show good gold." Gentlemen, from so careful and accurate a man as Mr. George Gray, I think that cable promises a very good prospect, and that we have every reason to be satisfied at present with our property. (Hear, hear.) At any rate, winter threatens to present no difficulty, except it may be in its abundance, which is a refreshing change for the moment



on the scarcity of the commodity in other parts of Hannan's field. We know there is sufficient timber, and at present labour is abundant; so, on the whole, your directors feel the pleasure they have had in meeting you to-day is enhanced by the satisfactory character of the report they are able to make of operations on your property up to date. Before sitting down, I can only assure you that you may always rely on the board's help and their careful exertions in your interests, and if any shareholder would like any further information I will give it to the best of my ability.

Mr. C. W. C. HUTTON thought the shareholders had every reason to express satisfaction, not only with the reports of Mr. George Gray, who was an extremely careful and reticent man, but also with the energy the directors had displayed in the past. He was sure the directors would retain the confidence of the shareholders in the future. His confidence in the board was unlimited, and he wished before the meeting separated to propose a vote of thanks to the Chairman and directors for the energy they had displayed in the conduct of the affairs of the company.

Mr. W. POOLE seconded the resolution, and it was carried. The CHAIRMAN briefly replied, and the meeting concluded.

## HANNAN'S DEVELOPMENT AND FINANCE CORPORATION, LIMITED.

The first ordinary (statutory) meeting of the shareholders in the Hannan's Development and Finance Corporation (Limited) was held on Tuesday, at Winchester House, E.C., under the presidency of Major-General BATES.

The SECRETARY (Mr. Henry Munns) read the notice convening the meeting.

The CHAIRMAN said: Ladies and Gentlemen—It has been my privilege to preside at several company meetings in this hall, but none have given me so much pleasure and satisfaction as to attend this, because of the gratifying information I have to give the shareholders of this corporation, not only with reference to the assets and properties of the company, but the fact that we are enabled to declare and pay our maximum interim dividend. (Hear, hear.) I will, first of all, remind you that it is now barely four months since you, ladies and gentlemen, privately subscribed the necessary capital to enable us to commence operations, and we have had at our disposal all the money necessary for that purpose. Everything has been done to establish the business on a sound footing, and to completely organise the various departments. We are satisfied that our undertaking is now established on an impregnable basis, and the facts that I have the pleasure of putting before you to-day will give you satisfactory proof of both the permanent and profitable nature of our business. Our first attention has been directed to the Hannan's, as the development of the mines in that district is more advanced than in any other; comparing it with the development of other centres, it is generally believed that it contains by far the richest auriferous deposit in the whole of Western Australia. It would be taking up too much of your time for me to explain in detail each of the properties in which we are interested, but the report that your directors recently issued to the shareholders contains the fullest information. We adopted this course, firstly, because we were anxious to let you know as soon as possible exactly how the business was proceeding, and acquaint you with the interests that we had secured; and, secondly, because we did not consider that it would be advisable to disclose at a public meeting the whole of the company's interests. Since that report was issued I have the pleasure to inform you that we have still further extended our interests in the Hannan's District, and have secured another property, consisting of 24 acres, most favourably situated in the best part of the Hannan's District, and adjacent to, and on the same run of lodes as the Hannan's Brownhill, Crosses No. 1, Maritans, Cassidy Hill, and Hannan's Sir John Forrest Mines. The property I refer to was secured upon receipt of an excellent report from Mr. R. H. Carlisle, the mine manager of Crosses No. 1 North; and as it had not been secured at the time we issued our report to you I should like to read you one or two extracts:—"It is well within the [known auriferous belt that contains all the good mines in the district, and the surface indications are so pronounced as to indicate the position of some of the lodes that must go through the section, lodes which have been proved in other properties in the immediate vicinity to be of great extent and rich in gold. The ironstone lode, which is such a prominent feature in the lease, and which traverses its whole length, is identical with the one at Brownhill, Crosses No. 1, and other mines on the line, and its presence on the lease simplifies development, as in most cases it has been found to be the cap of a valuable lode, and an almost unfailing guide to its vicinity. From the position and contour of the ground I am of opinion water could be found on the lower portion of the lease at a depth of about 100 feet, and there is a good supply of timber for mining purposes on the property. I am of opinion that the section is a valuable one from its position being fairly in the line of so many good properties, many of whose lodes must traverse it from end to end. It offers facilities for cheap and rapid development, and I think it is well worth acquiring." This report of Mr. Carlisle has been thoroughly confirmed by Captain Oates, who is the successful manager of the following well-known companies:—The Associated Gold Mines of Western Australia, Associated Southern, Lake View South, Coolgardie Mint and Iron King, Hannan's Oroya, Hannan's Proprietary, Brookman's Boulder, and several other well-known undertakings. Another matter of interest that has occurred since the issuing of the report is the issuing of one of our subsidiary companies—viz., the Hannan's North Crosses Gold Mining Company (Limited). This property, as you will see on reference to the map that we have sent you, adjoins one of the richest and most extensively developed mines in the Kalgoorlie district—viz., Hannan's Crosses, and you will notice that it is surrounded by a number of well-known successful ventures, including the Brownhills, True Blue, Crosses South, United Brownhill Consols, Brownhill Proprietary, Hannan's Proprietary, Crosses No. 1 North, Hannan's Central, Medinde Hill, Iron Monarch, Hannan's Parings, and many others. Mr. G. P. Hurst, late assistant geologist to the Lake Mulligan Palaeontological Expedition, has been appointed manager, has recently returned to Australia to superintend the development of these mines. Before our company purchased this property Mr. Hurst, who was then in Australia, made a careful examination of it, and his opinion is that it is one of the most valuable properties in the Kalgoorlie district. Our corporation have retained a very large interest in the shares of that company in view of the great richness of the property, and the almost certainty of the shares in a very short time commanding a large premium. By so doing the profit which has already accrued upon the sale of the mine to the company will, in our opinion, be at least doubled by the premiums on the sale of the shares. Without going into fuller details as to these and other interests in the Hannan's district which we hold it will be satisfactory to you to learn that we are interested in no less than nine distinct leases, having a combined area of about 165 acres, which, I think you will agree, is very large, considering the high value of mines in that district. On all the other leases in which we are interested the developments continue satisfactory, and their values have considerably increased and are still increasing. As to the favourable position of all our leases, I would ask you to refer to the map that has been forwarded to you, and without any words from me it will enable you to appreciate their position and value. Before I conclude my remarks I may say that we are represented in Western Australia by gentlemen of very high standing, and in this important matter we are pleased to say that arrangements have been completed with Mr. C. O. West, F.R.S., who will proceed shortly to West Australia under special arrangement of your company, and his experience in mining and financial matters should bring golden results to the shareholders. Mr. West has had very wide experience in many mining centres. He recently returned from South Africa, and as it is believed that it will be some months before the troubles in that country become settled, he will devote his time in acquiring for us interests in properties in Western Australia, and, with his knowledge of mining, will be able to take

advantage of any new discoveries, and secure first hand properties and claims which are worthy of development, and which in the course of our operations we should resell or float in the London market as soon as their paying powers have been demonstrated. Now, as to extending our operations. Opportunities almost daily occur for the very profitable employment of capital not only in West Australia but elsewhere, and, as regards West Australia, the directors do not think you would wish to confine operations to the Hannan's district; therefore, attention is being directed to other districts, and we are obtaining reliable information in confirmation of the reports of the developments of properties in other districts. Further opportunities present themselves for participating in properties and companies in New Zealand, where we, your directors, propose to be represented, and to avail ourselves of the opportunities as they occur of acquiring interests outright for flotation on the London market, or participating in their shares. Several desirable leases and other valuable interests are under offer to the corporation. An opportunity also occurs of realising considerable profits by affording financial assistance to prospectors, pioneers, and other owners whose properties are only of value in the event of their being provided with the wherewithal to continue developments. Altogether the business of your corporation is now ripe for a very large extension, and we, your directors, see our way to the profitable employment of an additional amount of capital, and it would be a great pity if we did not accept this advantage that presents itself. We have, therefore, decided to make a further issue of shares, and to invite public subscription, but inasmuch as both the ordinary and deferred shares are being dealt in on the London Stock Exchange at considerable premiums, the ordinary shares I understand to-day are dealt in at £1 8s. 3d. to £1 8s. 9d., and the £1 deferred shares at £10 to £10 5s. The present shareholders will have priority of allotment. (Applause.) This premium, in our opinion, is more than justified, having regard to our assets and properties, besides the usual difficulties of starting a new business have been surmounted, and those who now become shareholders in the corporation are joining a paying concern with its organisation complete, and will benefit by the high position which the corporation has earned. Reverting to the matter of the dividend, this could have been very much larger, but it is well to be on the safe side, and not distribute all our profits at once. Moreover, according to the constitution of the company, the ordinary shares are entitled to a preferential dividend of 15 per cent., the remaining profits being divisible equally among the ordinary shareholders and the deferred, and, therefore, we must postpone distribution of the total profits until the end of the financial year. Our position is such that those who are accustomed to attend these four-monthly meetings may think it phenomenal, but they are none the less facts, and, I am sure, it will be as welcome to you as it is satisfactory to your directors to know that our labours have been so successful; and even if no further business were contemplated our interests in various companies, taken at the market and par value, are sufficient to pay over 100 per cent.—(applause)—still leaving us the possessors of several valuable leases in the Hannan's district, which at their present price in themselves would be sufficient to return in cash the whole of the subscribed capital. It is now my pleasure to formally move that an interim dividend at the rate of 15 per cent. per annum be paid on the ordinary shares of the corporation, and hope, gentlemen, when we next meet, to have the pleasure of paying you another dividend at the end of the financial year that will exceed any other of the finance or development companies. (Applause.)

Mr. ALBERT KING seconded the resolution.

Mr. C. O. WEST said as the Chairman had been kind enough to refer to him in his opening speech, perhaps he might simply say that if he had the honour of going to Australia on behalf of the company that he should do his best for them. He had not yet been to Australia, but it did not require him to say there must be almost interminable scope for such a company as theirs. He did not think that their operations would be limited by any means to Hannan's district alone. He should say that in a very little time to come the north-east and north-west of Hannan's district would afford marvellous scope for such a company, and then if things warrant it, and they instructed him to do so, he would, of course, acquire interests in any new field which might come to the front. One thing which made him feel very satisfied with the way they had gone to work was, if they would allow him to say so, the names he saw associated with the properties they already had in Australia. Captain Hare, Mr. Byass, and Mr. Hurst all had excellent reputations in the Australian mining circle. When he got to Australia he would, he presumed, proceed to Hannan's district, and there if they wished he would go over all the properties and let them know what he thought of them. But perhaps he should confess that he already had a predisposition in their favour, because, from what he had read of the Australian mines, it must be an established fact that the reefs were both permanent and good. (Applause.) So that when he went, if he found they were not, he should be greatly disappointed. He could scarcely say anything else at present, but would remark that if that company maintained the reputation it already had established for itself, the directors would be able to fulfil everything that was promised in the prospectus. (Applause.)

Replying to questions asked by SHAREHOLDERS, the CHAIRMAN said the premium on the new ordinary shares would be 5s., and on the deferred £9. This was to the new shareholders, as the present holders had already been offered shares at par.

A vote of thanks to the Chairman and directors concluded the meeting.

## MYSORE REEFS (KANGUNDY) COMPANY, LIMITED.

The second ordinary general meeting of the Mysore Reefs (Kangundy) Company (Limited) was held at the Cannon-street Hotel, on Wednesday, Mr. JOHN HARVEY, J.P., D.L., presiding.

The SECRETARY (Mr. John Garland) read the notice convening the meeting.

The CHAIRMAN said: Gentlemen—When last I had the honour of addressing you we felt certain that on this occasion we should be able to offer you a dividend—though possibly a small one. The fate, however, have decreed it otherwise, and the two reasons for this are, first, the extreme hardness of the rock in which we have had to work; and, secondly, the question of water. As regards the rock, it has been pretty nearly as hard as adamant, and our progress has been unusually slow. In addition to that it has been very difficult to get even payable quartz out of the lode. I think, however, that there is a break in the clouds, and that our prospects now seem to be rather more favourable than they have been for some time past. A few days ago we telegraphed to the working superintendent asking him to cable us if there was any change. I hold in my hand the reply to that cablegram as follows:—"550 feet level north, quartz, width of lode 2 feet, assaying 14 dwts. per ton. Winze below intermediate quartz, width of lode 2 feet, assaying 1 ounce 15 dwts. per ton. 425 level quartz, width of lode 2 feet, assaying 1 ounce 17 dwts. per ton. Crosscut has just intersected vein; width of lode 2 feet 6 inches, assaying 9 dwts. per ton." That is a good deal better than anything we have had for the last 12 months, and if only we can succeed in getting a sufficiency of water I think the results will be considerably better than they have been in times past. As regards the water, on the last occasion we told you that we were sending out pipes something over 1 mile to take the water from the valley. Captain Scantlebury writes now that these are all laid. He proceeds:—"The large pump near the railway bridge has been at work for fully six months. Had it not been for the water that is being pumped from there the stamps could not have worked for the past six months. Owing to a partial failure of the last three monsoons the water obtainable has not been so much as we anticipated. The oldest inhabitant of the district, who is the Munsiff and Cornam of Attinattani village, informed me just before I left that he had never seen the water decrease to such a small stream, not even during the famine of 1887. We expect to have rain in the month of October, when I am hopeful that our troubles regarding the water supply

will end. The pitwork is being put down in the underlie shaft, and when the winding engine is removed from the 425 feet to the 550 feet level a crosscut west in the 425 feet will be driven to intersect the western lode, which I have no doubt will let down a good stream of water, and if we have a good monsoon in October, there will be no scarcity." We on this side of the table take a more hopeful view than we have done for some time past. You will see that there have always been returns from the mine. There is gold there, and if we can only get through the hard rock to the lower depths we will, no doubt, soon be able to give you some return for your patience. You may remember we gave up our old property, the Mysore Reefs. We then let to the Mysore Company the water in the mine for a small consideration per annum. Since that we have, after long negotiations, arranged to sell it to them for £6000, and it is really owing to these protracted negotiations that we were prevented from calling you together at an earlier date, as we thought you would be better pleased to hear that the whole thing was settled. We are now in a position to pay off the balance of our debentures, and we have some money in hand—sufficient, I hope, to bring the mine into a paying condition. I beg now to propose that the report and balance-sheet be received and adopted.

Mr. JOHN TAYLOR said: Gentlemen—I beg to second the resolution. The mining work during the past year, and, in fact, up to the present time, has been confined almost to the development of the underlie shaft and the vertical shaft, which are very near the northern portion of our property, and are only about 250 feet apart. The underlie shaft at the end of last year was 482 feet deep. It has now been sunk a further 84 feet, and is 16 feet below the new level—the 550 feet. The lode in the shaft has averaged somewhat over 2 feet in width, with an average assay value of about 12 dwts., but north of the shaft there is a shoot of considerably richer rock. A considerable piece of ground has been stoped away between the 325 feet and 425 feet levels, and here the reef has frequently been reported to yield upwards of 1 ounce of gold to the ton. In this ground two levels have been driven, one called the intermediate level, at a depth of 485 feet, and the other being at 550 feet. Fairly good rock has been met with in both these levels, but not until just now as rich as we should wish to see it. We may look here and undoubtedly for better news, because, with regard to the last named level, the cable tells that a winze below the intermediate level is in quartz 2 feet wide, assaying 1½ ounce. You will, therefore, doubtless look with great interest to the immediate future of the 550 feet level going north of the underlie shaft. The vertical shaft also is being sunk, with a view to the further development of this northern ground. It is now 360 feet deep, and the encouragement to push down this shaft is very much strengthened by a piece of news which also comes to us in the cable message, that the lode in the 425 feet level is 2 feet wide, worth 1 ounce 17 dwts., the reason, of course, being that that 425 feet level is now just about under the bottom of the vertical shaft, and I think we may look upon this probably as having touched what is to us a new shoot of valuable ground, if we may look upon it as worth 1 ounce 17 dwts. North of the vertical shaft also a piece of ground has been shown as stoped away during the past year. There is a shoot there also of fairly good rock. In the winze below the 260 feet level north, which is down, according to the last report, 58 feet, the lode averaged 3 feet 6 inches in width, with an average value of a little over 17 dwts. There is another point mentioned in the telegram, and that is a crosscut having intersected the reef, which is 2½ feet wide, worth 9 dwts. The last report from the mine, dated June 9, tells us that this crosscut, which is being driven east from the northern end of the 260 feet level, was being driven in search of the main part of the reef, and it was then out 110 feet. We were told in the report that it had passed through a formation 11 feet wide, and Captain Scantlebury then said he hoped to meet with the lode as soon as there were extensive ancient excavations to the east of this formation to be seen at the surface. It is, therefore, very satisfactory to know that at the only point of intersection of this reef it is a fair width, and contains an appreciable quantity of gold. The Chairman alluded to the trouble we have had owing to the very great hardness of the rock, and it is not only that it is hard to bore, but there appears to be an unusual difficulty in blasting it, even though we use the best explosive we can obtain. We all hope the superintendent's anticipations that when we get down through this hard bar not only will the lode be very much more easily worked, but that it will be wider and richer will prove correct. You will realise, I am sure, the importance of the news contained in the cable message, and it must be to you, as it is to me, most cheering to know that the latest intelligence as to the value of the reef in the chief workings of the mine is certainly by far the best that has come to us for some little time past. I trust we shall now have a continuance of equally favourable news, and that the increased yield of the reef will soon make itself shown in the mill. (Applause.)

The resolution was carried unanimously.

Mr. BARCLAY HARVEY moved the re-election of Mr. John Harvey and Major-General Beresford as directors.

Mr. L. H. EVANS seconded the resolution, and it was carried.

The auditors, Messrs. H. Swaffield and J. W. Jepps, were also re-elected.

Mr. SWAFFIELD, having replied, and expressed his confidence in the property, moved a vote of thanks to the Chairman and directors.

Mr. L. H. EVANS seconded the motion, and it was agreed to.

The meeting then terminated.

## YERRAKONDA GOLD MINING COMPANY, LIMITED.

The second ordinary general meeting of the shareholders in the Yerrakonda Gold Mining Company (Limited) was held on Wednesday, at the Cannon-street Hotel, Major-General G. DE LA POER BERESFORD presiding.

The SECRETARY (Mr. John Garland) read the notice convening the meeting.

The CHAIRMAN said: Gentlemen—The balance-sheet presented to you to-day does not call for much comment, but, as you will have observed, there is the item of £331 18s. 11d. for legal expenses. This seems heavy, but it was incurred in connection with the transfer of the property and the registration in India. We have endeavoured to keep the expenses as low as possible, and we have reduced them considerably since the date of the balance-sheet, March 31 last. At the present time our monthly expenditure does not exceed £250—in fact, £300 altogether, including the home charges as well as those in India. No doubt you will have read with interest the information you have had with regard to the sale of our old abandoned block—the old South-East Mysore block. This was valuable only for water, but in this respect was not valuable to us, as it is distant some miles from the present workings, and, therefore, was of no use to the company. But, fortunately, it is of value to a neighbouring company, to whom we sold it at the best price we could obtain—namely, £2750—which we think satisfactory. It is a windfall which will enable us to prosecute our mining work for some time to come. Our mining operations, as you have seen from the fortnightly reports, for a good while past have not been successful, and we thought it right, in view of the smallness of the capital, to abandon working on several points for the present, and to confine our operations to the South Shaft, which was considered to be very promising. Those of you who have read the reports will have seen that for the last two or three months the lode here has assayed 10 and 7 dwts., and at one time 13 dwts to the ton. To-day I am able to read a cablegram which we received yesterday, for we have asked for the latest information, which states that the lode at the bottom of the shaft is 2 feet wide, of quartz, assaying 13 dwts. of gold to the ton. The shaft has only reached a depth of 360 feet, and we have at last a payable lode. We are also informed that the lode frequently contains visible gold, and that its appearance is of a most promising character.



Our policy in the future will be to continue sinking this shaft with all possible speed, for it is evident the lode is improving in depth, and your directors are looking for good results. Mr. John Taylor will no doubt make a few remarks with regard to the mine, so I will now make way for him. I beg to propose the following resolution:—"That the report and balance-sheet to March 31, 1896, be received and adopted."

Mr. JOHN TAYLOR said: I beg to second the resolution. A perusal of Captain Scantlebury's report with the aid of the plan and sections which accompany it will have made it very clear to the shareholders how and where the work during the past year has been carried on. The mining has been of a very simple character, and is, I think, well set forth in these documents. Development work, you will have noticed, has been carried out to the extent of 1401 feet between November 14, 1894, and December 31, 1895, but, unluckily, with no substantial results or any discovery of importance. The Beresford's shaft was put down to a depth of 460 feet from the surface. It has been a large lode, 5 feet 10 inches in width, but the average assay, unluckily, is only about 3 dwts., which, of course, is not sufficient to pay. Levels were driven from the Beresford shaft at 200 and 300 feet, and other explorations carried out with the hope of proving that the lode was payable, but, as I have said before, so far without success. We hope by deeper sinking and further exploration of the levels that better results will be secured. At the present time we thought it better to allow the works on this part of the property to remain in abeyance and concentrate our efforts on another part known as the South Shaft. This shaft on December 31 had reached a depth of 244 feet; the lode averaged 3 feet 6 inches in width, of a dark blue quartz, similar, we are told by Captain Scantlebury, in appearance to the rich stone found on the Colar field. The average assay value is about 5 dwts. of gold to the ton. Since December 31 the shaft has been sunk a further 72 feet, and the last report to hand (dated June 9) tells us that it was 61 feet below the bottom level—the 255 feet; in fact, the only level. The lode has improved in richness, and, as the Chairman has already told you, it has been 3 feet in width, with an assay value approximately of 1 ounce, or about 10 dwts. It is said to be very promising in appearance, and the cable message tells us that the reef was 2 feet wide, and was worth 13 dwts., which is decidedly better than the news we have had before. The agents tell us in the last two or three reports to hand that there is visible gold in the quartz, and I really think we have every reason to look for better news at this place, which is, of course, of all importance, before very long. The drives have been extended north and south of the shaft, and are already at a distance of about 800 feet. The reef has been well defined and strong; it is of solid quartz, assaying  $2\frac{1}{2}$  to  $6\frac{1}{2}$  dwts. We have not yet got into ground rich enough to give us any profit, but I think we have very good reason to hope for that. The works are being vigorously pushed on, but as General Beresford said, at a moderate cost, and I trust that the next few months will show more favourable results than have fallen to the lot of the company so far. (Applause.)

Mr. MARTIN WOOD said, although the Chairman had said the expenses were very much reduced, he noticed that the directors' fees stood at £300.

The CHAIRMAN: We have been taking reduced fees all through. Mr. MARTIN WOOD, in the course of other remarks, asked what money the company had at present to deal with.

The CHAIRMAN: £3000.

The resolution was carried unanimously.

Mr. ROBERT TAYLOR proposed the re-election of Major-General Beresford and Colonel E. P. Pigott as directors.

The motion was seconded and agreed to.

The auditors, Messrs. J. and A. W. Sully, were also reappointed, and the meeting then concluded.

### WAIHI CONSOLIDATED GOLD MINES, LIMITED.

The statutory meeting of the Waihi Consolidated Gold Mines (Limited) was held on Wednesday, at Winchester House, Old Broad-street, E.C., under the presidency of Major-General P. D. HENDERSON, C.S.I.

The SECRETARY (Mr. R. Gray Orr) read the notice convening the meeting.

The CHAIRMAN said: Gentlemen—This being the statutory meeting of the company, there are no accounts and no report to be presented, but the opportunity is a favourable one for placing before shareholders the fullest information available regarding the present position and future prospects of the company. The company was incorporated on March 10 last with a share capital of £200,000. The whole of the shares have been taken up with the exception of the unissued reserve on which, under the contract with the vendors, these latter have a call at 30s. per share within 12 months. The purchase consideration for the property was £150,000, payable as to £50,000 in cash, £70,000 in fully paid-up shares, and the balance in shares or cash, at the option of the directors. The purchase price as actually paid was as follows: Cash to vendor, £10,000; shares allotted to vendor, £140,000. We found ourselves at starting with a working capital of £25,100, and a reserve at our backs of £24,900 in unissued shares in case of further working capital being required. We may, I think, therefore, congratulate ourselves on being in an exceptionally strong position in this respect. The allotment took place on March 16, and share certificates were ready for issue to shareholders on June 3. A Stock Exchange settlement was applied for at once, and the same has been granted. As announced by circular, the board, soon after formation of the company, was strengthened by the acceptance of a seat on it of Sir Julius Vogel, K.C.M.G., late Premier of New Zealand. The transfer of the property was completed with commendable promptitude, and it stood in the name of the company on April 13. A power of attorney has been forwarded by our solicitors to their agent in Auckland to enable them to open a colonial register in accordance with, and within the time prescribed by, the New Zealand Mining Act. The local committee continued to push forward vigorously the development work which had commenced before the formation of the company. This consisted of a trial shaft, from which at a depth of 75 feet a drive had been run, which, by April 14, had cut a gold bearing lode 60 feet in width. The local committee thereupon recommended by cable starting the main shaft immediately by enlarging the existing trial shaft to the requisite dimensions. This was authorised by your board, who also sanctioned the expenditure asked for of £1500 towards the temporary plant required in order to push forward the working of the shaft with despatch. By May 30 the main shaft was reported by wire to be down 70 feet, and good progress was being made. I will now read you extracts of a letter from the mine manager, Mr. McLean, dated May 12. Mr. McLean writes:—"The mine consists of two special claims, each 100 acres. The situation, relative to well-known adjacent mines, is shown on the tracing sent herewith. So far, the explorations in the Waihi and Silvertown Mines have been confined to four main lodes—namely, in the Waihi—the Martha and Welcome reefs, and in the Silvertown—the No. 1 and No. 2 reefs. The width of the Waihi reefs (Martha and Welcome) averages 30 and 15 feet respectively. Those in the Silvertown measure 14 feet and 20 feet respectively. The position and bearing of these four reefs, you will please observe, are all leading direct for your land, as shown on this tracing. In the original proposed programme of development for your ground two shafts were recommended, to be started forthwith, but further consideration led towards a more cautious policy, and the local directors have determined on only sinking one shaft at present. The second one to be located, and started with greater certainty as to its proper position, later on, when the developments now proceeding in adjacent and adjoining mines will have determined exactly the most favourable position. When the Grand Junction Company have located the Martha and Welcome reefs in their ground, when further driving has been continued on the Silvertown reefs, and when driving from our own shaft has deter-

mined the true line of the reef, then, and not till then, we shall be able to sink our second shaft upon the spot where those junction within your Favona section. Meantime, a shaft 14 by 6, properly framed and divided, is being sunk to deal with the large No. 2 lode, near the Silvertown boundary. This reef was intersected at 80 feet depth by a crosscut from a small prospecting shaft that was sunk for the purpose merely of proving the presence of the reef, which at that point did not show any outcrop at the surface; indeed, the crosscut evidently intersected the reef near its upper flange, at which point it had a width of some 60 feet of quartz. The fact of the ore at this point being of low average value (some 10s. to 16s. per ton) is consistent with the general character of all the Waihi ore bodies, and the sinking of the shaft to 400 feet has been determined on, with perfect confidence that the reef will be found gradually richer at each deeper intersection from the shaft. Crosscuts from the shaft will be extended through the ore at intervals of 80 feet. In the report given by Mr. Walker, he estimated for two shafts to cost respectively £3000 and £7500. The shaft and equipment now undertaken is a compromise between the two. His estimate for the second shaft contemplated having the bulk of the drainage duty done by powerful pumps at No. 2 shaft. But the costs in this connection must be estimated for, and included in, our present undertaking. Our local directors on the 9th inst. cabled for £1500 to cover costs of sinking and building a winding equipment, and other preliminary work. The shaft, so deep (80 feet), is comparatively dry, and the coming water will probably be mastered by means of a small Tangye pump and boiler (included in the £1500 estimate), until we reach some 150 feet, and meantime you will have received advices by mail, covering estimate for a capable permanent pumping plant, and will have authorised (by cable) the local directors to purchase the same, or you may have seen it advisable to have the gear made, and dispatched direct from England. In either case I venture to urge that there should be no unnecessary delay. I hope to be able to sink at the rate of about 20 feet per week, and, therefore, will reach 150 feet in some 10 weeks hence; any interval will be used to excavate a chamber, and to open workings on the lodes at (say) 140 feet from surface, pending completion of pumping plant, when further sinking will be resumed." The main point to be noted is that the local committee have strongly recommended that operations should be confined for the present to sinking one shaft on the Silvertown lode only. Your board considers this to be a wise policy in view to the developments on our own, and adjoining properties, which, we believe, will enable the site for the second shaft on the Martha lode to be located with greater certainty, thus effecting an economy of time and money. You will have noticed that Mr. McLean will reach a depth of 150 feet about the end of July, when he expects that further progress will be stopped by water till the permanent pumping plant can be erected. Our last information is that the main shaft is down 105 feet. Your directors have received and considered tenders for the permanent machinery required, in accordance with the specifications furnished by the local committee of their requirements. The matter is still under consideration, but we intend to lose no time in ordering and sending out the machinery as soon as possible. Unfortunately, the factors of distance and time are against speedy communication with our New Zealand friends. As early as possible—namely, on April 17, we wrote to them at length, giving our views as to the work to be carried out, and defining our relations with them. To this no reply has yet been received, but from the intermediate communications received, and especially from the letters, extracts of which have been read to you, I think you will feel assured that they are quite alive to the importance of developing our property with energy and wisdom. Mr. Walker, who was the promoter and vendor of both the Waihi Gold Mining Company and of what is now the Waihi Grand Junction Gold Company, and who has a very large interest in this country, is aiding the local committee with his experienced advice, and one of the members of that committee, Mr. Charles McLean, is at present mine manager. Until receipt of a reply from New Zealand, we are not in a position to know whether this is likely to be a permanent arrangement. Your board of directors have held 25 meetings since the incorporation of the company, and I may assure you, have spared neither time or trouble in endeavouring to arrange all details of the administrative work. When the time comes for the first annual meeting of the company, I trust that the results of our labours will be such as to obtain your approbation, and I very sincerely hope that we may be able to give you good news of success achieved. (Applause.)

A vote of thanks to the Chairman concluded the proceedings.

### WHEAL AGAR.

Mr. H. TREMBATH presided over the adjourned meeting of Wheal Agar shareholders, held on Tuesday.

Mr. HENRY GRYLLES advised them not to give way to the new demand by East Pool that before the agreement to arbitrate is signed Wheal Agar should nominate an arbitrator, and the two arbitrators should name an umpire. When it is signed it will be the duty of Wheal Agar to nominate an independent gentleman, to whom no objection could well be taken. In the present deadlock no fresh resolution was necessary.

Mr. JOHN MAYNE asked if they could not get the agreement signed, what would be their position in September when their lease expired.

Mr. GRYLLES replied that Lord Robertes had the right of pre-emption on the machinery, and he might exercise that right, in which case the value of the machinery would have to be arrived at by a valuation.

Mr. G. S. BRAY protested against these continued delays. He had already intimated that, in his opinion, there was no *bona fide* attempt to settle the question, but he refused to say whether the fault was on the part of East Pool or Wheal Agar. He had five shares in East Pool and had had forty in Agar for many years, so they could see his interest did not solely lie in East Pool.

Mr. GRYLLES: I did not mention Mr. Bray's name in that connexion.

Mr. BRAY continued: The best and cheapest course would be to stop all negotiations and offer the machinery to Lord Robertes, and let East Pool come in and take anything they wanted at a fair valuation. This public washing of the dirty linen of Cornish mining was not doing any good to the industry, and both outside and inside capital was locked up in a good many people's pockets.

The CHAIRMAN asked if Mr. Bray did not consider East Pool committee were open to blame for refusing to sign an agreement they had agreed upon.

Mr. BRAY said when East Pool offered £5,000 or £6,000 the offer ought to have been accepted and the matter settled.

Mr. CORNELIUS BAWDEN: We never had an offer of £5,000 or £6,000.

Mr. BRAY: According to the papers, Mr. Lanyon offered his own cheque for £5,000.

Mr. BAWDEN said Mr. Hattersley and his family had for over thirty years paid tens of thousands of pounds at Wheal Agar, and Mr. Petrie had spent thousands of pounds, and yet it was to go forth to the public that they had not been legitimate holders.

Mr. BRAY: I never said anything of the kind.

Mr. MAYNE said the representative of a certain firm told him that they relinquished their shares at the time of Mr. Lanyon's offer, and they expected to receive their proportion of the value of the mine as based upon Mr. Lanyon's offer.

Mr. BRAY: That is a question that will have to be fought out. I should not like to say they are not perfectly correct.

Mr. BAWDEN remarked there was no fear of a call being made on Wheal Agar shareholders, unless they decided to work the mine again.

The CHAIRMAN said no doubt East Pool committee wanted to get Wheal Agar at old iron price, but that they never would. East Pool's own estimate for a new engine was £8,000.

The proceedings terminated without any resolution being passed.

The BANK OF EGYPT (LIMITED) will pay on July 24 inst., an interim dividend at the rate of 6 per cent. per annum for the half-year ending June 30, 1896.

### WEST AUSTRALIAN (GOLD DISTRICT) TRADING SYNDICATE LTD.

AN extraordinary general meeting of the shareholders in the West Australian (Gold District) Trading Syndicate was held yesterday at Winchester House, E.C., under the presidency of Mr. L. H. Goodman, for the purpose of considering resolutions for the reconstruction of the Company.

The Secretary (Mr. Hugh Bernard) read the notice convening the meeting.

The CHAIRMAN, who was warmly received, said: Gentlemen,—To-day I shall claim a very special indulgence from you, as I have scarcely the strength to express in language and voice that which I could attempt if my health were better than it is at the present moment. I am going to read you some notes I have very carefully made, and on which I and my co-directors stand by. It is a great pleasure for me to meet you again, and to see around me so large a gathering of shareholders, among whom are representatives of some of the most honoured houses in the City of London. When I last stood before you, our undertaking was an infant, although a very vigorous baby; for unlike other infants it was able to lift a load equal to its own weight, and to carry in its arms a dividend at the rate of 100 per cent. per annum. Since then, however, it has thriven amazingly, and has donned what the old Romans used to call the "toga virilis," which was the sign and the mark of a vigorous manhood. The circular which you have heard read simply tells you that the company was to be liquidated and re-constructed. It was impossible to give you more particulars in this communication, but I am now prepared, on behalf of the directors, to take you completely into our confidence, and to tell you everything that we know ourselves. And here let me express my sympathy with that anxious shareholder who, on receiving our circular, wrote in indignant terms to say that he was astounded to learn that a company that had just paid a dividend of 100 per cent. should have to go into liquidation so soon. "There must be gross mismanagement somewhere," said he, and unless he had a satisfactory reply he should summon an indignation meeting of the shareholders.

Well, gentlemen, my answer is, that if that indignant shareholder will step up to this table, my secretary will hand him a cheque for his shares for at least ten times the amount of the original value thereof. (Applause.) As there is no response to my challenge, I presume that the shareholder thinks that 1,000 per cent. on his investment is not quite enough, and I agree with him in this case, he is perfectly right. Gentlemen, since we last met, the business of our trading syndicate has increased by leaps and bounds; in fact, we have had to charter our own vessels to carry out our goods, and I may tell you confidentially, that this trading branch of our business is bringing us in a revenue at the rate of £85,000 per annum. Under the energetic direction of our chief manager in West Australia, new districts are being opened up throughout the gold area, and the recent enactments of the Legislature to the effect that no more canvas erections or houses should be allowed in the townships, has stimulated the demand for all kinds of building materials, such as we are almost unable to cope with. Soon our new methods of treatment of gold-bearing quartz will be commenced on every goldfield on behalf of the company. Likewise we shall, before long, be in the exceedingly advantageous position of sending out our ships laden with merchandise, and employing them, on their return, to bring back full cargoes of Jarrah wood from our own estates to supply the almost unlimited demand in London for the wood paving of our roads. Well, gentlemen, I have heard several people remark that this phenomenal outburst of prosperity is all very well for the moment; but it will not last; other companies seeing your prosperity will start trading themselves. We shall be cutting each other's throats, and your profits will go down to vanishing point. Gentlemen, I have no desire to stifle criticism. I court every kind of investigation. I feel under a positive obligation for any practicable suggestion, and am therefore glad to hear any objections from whatever quarter they might come; and my answer to these arguments is twofold. In the first place, Western Australia is only in its infancy. It is a country twenty times as large as England. In it there is scope for boundless developments. The population is increasing at the rate of a quarter of a million per annum, and I unhesitatingly say there is room for all of us, and there is a fortune for all of us, never mind how many companies might imitate our own tactics. In the second place, I would answer, that we have been fortunate enough to secure many monopolies and agencies as the sole representatives of some of the greatest firms in England. No other can take these from us. I will not enumerate the long list which I could read out to you, but when I tell you that the list is headed by the great firm of Bass & Co., whose name is a household word—their agency—which we hold for the whole of the colony absolutely, and the heads of the great firm are all large shareholders in this company—will, probably bring us in—well, the sum, although it is on my notes, I prefer not to mention, but it amounts to many thousands of pounds a year. I think, therefore, you will agree with me that we stand on a rock which no competition can possibly shake. Furthermore, since our name and fame have spread through Western Australia, many valuable mines have been offered to us by prospectors, who have not the capital to float them themselves, some of them surpassingly rich in gold, and from this source alone we could make very handsome dividends upon the capital of our company, even if it were twenty times as large as it is at the present. If it were not for fear of wearying you, I could read you numerous despatches which have been received as lately as the last few days, making the most tempting offers. But we take nothing speculative; we must feel confident of an enterprise before we consent to launch a penny in it. Well, gentlemen, all these splendid sources of income which I have enumerated fade into insignificance by the side of an announcement which it is my good fortune to be able to make to you—namely, that we have, upon certain terms, secured for our company the sole concession for Western Australia of a discovery which is destined to revolutionise the gold-producing industry in every part of the globe. You are aware that one of the greatest difficulties which miners have to deal with is the crushing of the quartz, especially of those refractory ores, which, owing to the presence of iron pyrites, render the mineral of excessive hardness. To deal with this, powerful stamps have to be erected, costing many thousands of pounds; elaborate steam engines have to be used to bring these massive implements into operation, and enormous expense has to be incurred to carry these ponderous materials over wastes of stone and sand, often in a temperature of 120 degs., in waggons drawn by large teams of bullocks, camels, or horses. We have ourselves paid at the rate of £65 per ton to carry merchandise the short distance between Coolgardie and Niagara townships. Gentlemen, I am enabled to tell you to-day, after proofs of personal experience and ocular demonstration, that a discovery has been made which changes all this, so far as the gold industry is concerned. It is really a marvellous invention; it will do away with all the crushing, stamping, and pulverising as hitherto practised, and also it will enable a miner to reduce the hardest quartz to a condition of sand and even a fine flour without producing the usual slime or mud, and free from the presence of the various deleterious substances which are the enemies of the gold miner all over the world. It drives off every particle of sulphur, and breaks the ore into atoms along the line of the particles of the gold itself, which may be seen sparkling on the little particles of quartz or lying in a free state among the disintegrated ore. We have treated stone from South Africa, from Western Australia, from Guiana, from India, and from Mexico, and no matter how hard the quartz may be, it yields to the process in times varying from twenty minutes to an hour; and the extraordinary thing is, as we have found from careful experience that if the ore fails to break into particles within an hour it is proof positive that it contains no metal. What a boon this will be for prospectors. Here, gentlemen—(holding up a lump of quartz)—is a specimen of the hardest quartz which we can find in Western Australia, taken from a parcel consigned to us from the Menzies district. The rest of the parcel was, under my own eyes, and the eyes of other gentlemen, subjected to this marvellous process. We stood there with our watches in our hands inspecting the process, and waiting for the results; within one hour the quartz was drawn out from the apparatus, no longer as hard as granite and refractory as iron pyrites, but in this state gentlemen, such as I have in this plate before you, so friable and so soft that I can rub it into powder by the



pressure of my fingers. But I hear you say, and quite rightly, too. What about the cost of it? Well, gentlemen, I have here numerous estimates from experienced men, secretaries of companies, and old prospectors as to the cost. These estimates vary from 9s. under the most favourable circumstances, to 30s. under the conditions ruling in Western Australia; let us strike the average, that is 19s. 6d. Now, gentlemen, by this wonderful process rightly called the "Ore Atomic Reduction Process" the quartz can be reduced with the simplest possible machinery, costing only a few pounds, and can be made into a powder, at a cost to us of about 6d. per ton. Just realise this fact, that even if we charge a royalty of 5s. per ton we can save every company 10s. to 14s. per ton on all their crushings, and at the same time make an enormous revenue for ourselves. The highest grades will now give a splendidly increased profit, and the very lowest grades, at present thrown away as useless, will yield a high return. Gentlemen, I am in the proud and happy position to tell you that we have secured the rights of this remarkable invention for Western Australia for our own trading company, with full and complete power to grant licenses for the whole of the colony, or to form subsidiary companies as we might think fit. With an eye to the future possibilities, we are also having a large number of gentlemen of educational experience instructed at the Royal School of Mines, in order to become expert prospectors and assayers, most of whom have a knowledge of mining engineering already, and all of whom will be able to take charge of the new districts which we propose to assign to them. And here let me say, gentlemen, that immediately I heard of this remarkable process I hastened to acquire a personal interest in it, in the first place, for my own benefit, and, in the second, for that of our own corporation, for I at once recognised the enormous possibilities of the future, and I felt that it was my duty to be in a position to secure for us the first claim upon the Western Australian rights. Considering there are now more than 600 mines at this present moment in Western Australia, supposing that we received only an average of £1,000 from each company for the initial privilege of using our system, we should obtain a capital amount of 600,000 for the initial right. Add to this a royalty, say of 5s. on every ton crushed, the amount of which will itself produce a huge revenue, and you can then fairly estimate the value of the concession which we have obtained. Expert judges have estimated at all prices, from £250,000 up to a million; but I am pleased to say that we have secured the sole concession for the Colony, for a payment of 120,000 ordinary shares, 600 deferred shares, and only £30,000 in cash. I think you will agree with me that we have made a splendid bargain, which you will not fail to notify before the few days of option expire, for there are syndicates waiting to outbid us. In fact, negotiations at the present moment with another colony are progressing for the purchase of the concession for half-a-million sterling, and should our option expire there are many eager capitalists who would be only too glad to pay that sum of half-a-million for the concession for Western Australia; whereas, as I have already said, we have the option of purchase for the payment of 120,000 ordinary shares, 600 deferred shares, and £30,000 in cash, showing an advantage to the syndicate of no less a sum than £348,800. And now, gentlemen, I come to the main object of this meeting. You must be aware that all these enlarged enterprises could not be carried on with the small capital with which we originally started—viz.; £20,000—and no better proof of this can be shown than the fact that the market value of our shares at this present moment is represented by nearly a quarter of a million sterling. What that value will be when the company comes to understand the real nature of our operations, it is difficult to prophesy, what we have to do now, has reference to our immediate duty for the re-organisation of the trading syndicate, and you will allow me to place before you the resolution on the notice convening the meeting. Our solicitor will read the proposal by which the parent company will be liquidated, and the capital of the new corporation will be increased to £505,000, in which every shareholder will have his due and proper proportion. As you are aware, in the old company there were 60,000 ordinary shares of 5s. each, and 5,000 founders' shares of £1. In the new company there will be 500,000 ordinary shares of £1, and 5,000 founders' shares also of £1. In the old company the ordinary shares have a first charge upon the profits to the extent of 10 per cent. per annum, and after that was paid, the ordinary and the founders' shares divided the remainder of the profits between them. *Re dividend:* It is proposed that the same equitable arrangement shall hold good in the new corporation. Also that one founder's share in the new corporation will be allotted to every holder of 200 of the new shares. And now I come to the distribution of 500,000 fully paid-up shares of £1 each. Every shareholder in the old company holding the 5s. shares, will receive for each of these two fully paid-up £1 shares in the new company; and every holder of one founder's share in the old company will receive 200 fully paid ordinary shares in the new corporation. This has been carefully worked out on the basis of the mutual rights of the old company shareholder. What will be the value of shares in the market, I cannot prognosticate, predictions from every quarter say that they will stand at a high premium. With this I have nothing to do, I have all along discouraged gambling in shares, and shall continue to do so. I have resolutely refrained from permitting any shares to be pooled, or from selling any of my own holding, although I am one of the largest shareholders in the Company. I have persistently advised my friends to hold their shares in the old Company, and I shall as persistently urge them to stick tight to their shares in the new, for the possibilities of increase both for themselves and their children after them, are really beyond my power to predict. And now, gentlemen, as to the working capital of our new corporation, for this is the motive power in every enterprise and in this item there should be no stint. The ordinary and founders shares will absorb 200,000 of the 500,000 shares; add to this the 120,000 to be paid for the concession of the Ore Atomic Reduction Corporation, we have a total of 320,000 shares, leaving a 180,000 shares free. These we compute to be worth a minimum value of £320,000, taking them at only £1 premium. Deducting these from the £505,000 to be paid by the Atomic Corporation, and this leaves us no less a sum than £185,000 for reserve and for working capital. After providing one founder's share for every holder of 200 ordinary, and paying 600 founders' shares to the Ore Reduction Co., and there will remain 1,900 founders' shares in the treasury of the company. These represent a very large and powerful reserve, in addition to whatever might be allotted for this purpose out of the £290,000 working capital. And now let me imitate the good example of the Chancellor of the Exchequer, and give you a forecast of the probable income of the present year. As you are aware we are now paying a dividend at the rate of 100 per cent. per annum, which I announced last meeting. We compute our revenue from trading, even at the present rate, at a total of £85,000, and from our wonderful patent any sum between £50,000 and half a million. Let us take it at the lowest estimate—namely, £50,000. This would produce a total of £135,000 for the ensuing year, which, with the premium of the unissued founders' shares, is equal to a dividend of about 55 per cent. per annum on the issue of the company. (Applause.)

The SECRETARY then read the resolutions, which were as follows:—(1.) "That it is desirable to reconstruct the company, and accordingly that the company be wound-up voluntarily, and that liquidators be appointed for the purposes of such winding up." (2.) That the said liquidators be and they are hereby authorised to consent to the registration of a new limited company, to be registered with a Memorandum and Articles of Association, which have already been prepared with the privacy and approval of the directors of this company.—(3.) That the draft agreement submitted to this meeting, and expressed to be made between this company and its liquidators of the one part, and the said new company (Limited) of the other part, be and the same is hereby approved, and that the said liquidators be, and they are hereby authorised, pursuant to Section 161 of the Companies Acts, 1862, to enter into an agreement with such new company (when incorporated) in the terms of the said draft, and to carry the same into effect with such (if any) modifications as they think expedient."

The SOLICITOR (Mr. Rondall) next read the agreement, and

remarked that with regard to the directors' fees, the board preferred to leave that matter to the discretion of the shareholders.

Mr. CLYDESDALE proposed the first resolution.

Colonel OGILVIE seconded the motion.

Mr. J. P. ROGERS proposed, and Mr. CLYDESDALE seconded, the second resolution.

The third resolution was moved by Mr. F. BARKER, and seconded by Mr. BOND.

On being put, all three resolutions were carried by acclamation.

The CHAIRMAN also moved "That Mr. Thomas William Mills, Fellow of the Institute of Secretaries, and Major A. Tulloch, be appointed liquidators of the West Australian (Gold District) Trading Syndicate, for the purpose of the liquidation of the company, at a remuneration to be determined hereafter.

Mr. HURST-BROWN seconded the resolution, and it was carried.

Mr. OGILVIE moved a vote of thanks to the Chairman.

A SHAREHOLDER seconded the motion.

Sir EDWARD LEE, in supporting the resolution, referred to the energy the Chairman had displayed in promoting the success of the syndicate. At one time, in consequence of the smallness of the capital, he made himself responsible for the sum of £60,000.

The motion was unanimously agreed to, cheers being also raised for Mr. Goodman.

The CHAIRMAN, in reply, said in connection with the new process he could have secured for them, before the contracts had scarcely been signed, a profit of £90,000 without any risk or labour.

The meeting then terminated.

#### GALLEWA GOLD MINES (LIMITED).

The statutory meeting of the shareholders in the Gallewa Gold Mines (Limited) took place on Thursday, at the offices of the Company, No. 72, Bishopsgate-street Within.—Mr. A. Parks Smith, who presided, said the company had already paid for the property, and a 10-stamp battery had been erected on the mine. A cablegram they had just received from the Melbourne agents stated that the mill started last Monday. Work was being pushed ahead, and the mine was looking well. In consequence of being advised that another shaft was necessary on the property, additional machinery for this purpose had been ordered. There were three distinct reefs running through the leases. Mr. Matthew Wynn, the mine manager, bore an excellent reputation. The reports which the directors had from time to time received were of a very gratifying character, and there was every indication that the mine would prove to be a very rich one.—A vote of thanks to the Chairman and directors concluded the meeting.

#### BIG BLOW GOLD MINES (LIMITED).

The second ordinary general meeting of the shareholders in the Big Blow Gold Mines (Limited) was held yesterday at Winchester House, E.C.—Captain MacTaggart, who presided, in moving the adoption of the report, said there was no doubt about the fact that the mine they were in possession of contained an enormous mass of rich ore, and the only thing which had prevented them making the company a dividend-paying concern was the water difficulty. It was in consequence of this that they were now called upon to agree to a reconstruction scheme, which the shareholders had already resolved to do at an informal meeting, and the resolutions for the purpose would be subsequently submitted. Under the scheme every shareholder would receive in the new company a £1 share, credited with 17s. paid up, for every share they now held, and it was anticipated that this would enable them to continue the work until a water supply was obtained.—Mr. Barch seconded the resolution, and it was carried.—The resolutions for the reconstruction of the company were then proposed by the Chairman, and, after some discussion, carried.—A vote of thanks to the Chairman concluded the proceedings.

#### RAND SOUTHERN GOLD MINING COMPANY (LIMITED).

An extraordinary general meeting of the shareholders in the Rand Southern Gold Mining Company (Limited) took place on Wednesday, at Winchester House, E.C., under the presidency of Mr. Edward Rawlings, who stated that when the company was formed in 1895, it was left with a working capital £21,000, which they were advised would be sufficient for all purposes. In July, 1895, they acquired some adjoining claims—167 in all—for £9500, which they were informed were of a very valuable character. They considered they could easily raise the additional capital required to work the new claims, but, unfortunately, at the end of last year operations were suspended, subsequently Mr. Troye, the managing director of the Troye Exploration Syndicate, and the engineer of the Troye Syndicate and African Metals Company, inspected the claims, and, as a result, these companies had asked them to give them the option of 12 months of buying the mine. For the option they would pay £5000. If the option is exercised they agreed to form a new company, who would pay the Rand Southern £8000 in cash and £45,000 in fully paid-up shares.—The Chairman then moved "That the agreement, dated June 24, 1896, made between the company of the one part, and the Troye Exploration Company (Limited) and the African Metals Company (Limited), of the other part, submitted to the meeting, be approved."—The resolution was carried.

#### PORT PHILLIP GOLD COMPANY (LIMITED).

An extraordinary general meeting of the shareholders in the Port Phillip Gold Company (Limited) was held yesterday, at Winchester House, E.C., Mr. R. C. Power presiding, for the purpose of considering a resolution authorising an increase in the capital of the company to £100,000 by the creation of 200,000 new shares of 5s. each.—The Chairman, in moving the resolution, explained the terms of purchase, which it was proposed to conclude, for the acquisition of a new property in West Australia. The vendors of the claims would be satisfied that the bulk of their profits should be contingent on the result of the mining.—Mr. Preston seconded the resolution, saying he believed that, quite apart from the old property, they had an excellent property in Australia. Being personally acquainted with the agents who had selected these claims, and also knowing what class of men they were, he could assure the meeting that if there was a good property to be had they were the men to get it. He further believed that the property would be ably, economically, and honestly managed, and that the future history of the company would be very different from its past.—Mr. Thos. Cornish opposed the resolution, saying that as a shareholder of the Port Phillip Company he did not want to be saddled with an unproved property such as this in West Australia.—Mr. Ernst, while in favour of the acquisition of the property, objected to the clause giving the vendors the power to convert the shares. He also objected to any mortgage on the mine, and thought it would be better to purchase for a cash payment. After considerable discussion the resolution was put and defeated, 10 hands being held up in its favour and 12 against.—The Chairman demanded a poll, which was at once taken, with the result that the scrutineers reported that the requisite three-fourths majority was recorded in favour of the resolution, the Chairman putting in proxies for 94,000 votes.

GUATEMALA: CENTRAL AMERICAN EXHIBITION, 1897.—The Department of Science and Art has received, through the Foreign Office, a translation of a note from the Guatemalan Minister in Paris, enclosing a copy of the regulations issued for the above exhibition. The exhibition will be opened on March 15, 1897, and will last for six months. Although the character of the exhibition and the rules made for its arrangement prevent the Guatemalan Government from inviting foreign Governments to take an official part in it, they would view with great pleasure the co-operation of British exhibitors, who would be cordially welcomed, and whose goods would be accepted under the conditions laid down for the foreign section in the general regulations.

# THE ALLIANCE EXPLORING AND FINANCE CORPORATION, LIMITED.

THE  
PROSPECTUS  
WILL BE  
ADVERTISED  
ON  
MONDAY  
NEXT,  
JULY 13th.



The List for SUBSCRIPTIONS will CLOSE on MONDAY, JULY 13, for both TOWN and COUNTRY.

1. Mr. A. Burcher, of Messrs. A. Burcher and Co., states:—"I have examined this property very carefully, and I consider it to be without exception the most valuable one that has been opened up for many years."

2. Mr. J. H. Garrett states:—"The property is all very favourably situated for proving at a small cost, being of a hilly nature, and levels could be put in free of water with about 300 feet of back."

3. Mr. A. H. Richards states:—"Six tons of quartz yielded 24oz. of retorted gold."

4. Mr. D. R. Shireff Galbraith states:—"Sample of Maori Dream showed gold per ton of 2240lb. 50oz. 12dw. 18gr. Water and timber are plentiful."

The Anglo-French Gold Fields of Australasia, Limited, and the London and West Australian Syndicate, Limited, invite subscriptions for the Capital of the undermentioned issue.

## MAORI DREAM GOLD MINES, LIMITED.

(OHUI, NEW ZEALAND.)

Incorporated under the Companies' Act, 1882 to 1890.

CAPITAL £130,000, in £1 SHARES.

ISSUE OF 70,000 SHARES AT PAR.

Payments: 2s. 8d. per Share on Application, 2s. 6d. per share on Allotment, 5s. one Month after Allotment, and the Balance in calls not exceeding 5s. per Share as and when required. Shares may be paid for in full at any time, and will rank for dividend on the amount paid up.

### DIRECTORS.

The Right Hon. the EARL OF KILMOREY (Chairman, Westworth Gold Fields, Limited).  
W. F. C. ALEXANDER, Dashwood House, E.C.  
Colonel W. S. BROOKE (Anglo-French Gold Fields of Australasia, Limited).  
H. C. PARKES (Taitapu Gold Estate, Limited).  
T. COLUMBUS SMITH (Australasian Gold Trust, Limited).  
R. D. WILKINSON (Wahit Gladstone Gold Mining Company, Limited).

BANKERS.—BANK OF NEW ZEALAND, 1, Queen Victoria Street, E.C., and New Zealand.  
SOLICITORS.—BURN and BERRIDGE, 11, Old Broad Street, E.C.  
BROKERS.—BUCKLER, NORMAN, and GOWER, 11, Angel Court, E.C., and Stock Exchange, London, E.C.  
AUDITORS.—JAMES FRASER and SONS, 31, Cuthall Avenue, E.C.  
CONSULTING ENGINEER.—ARTHUR PEABE, F.R.G.S., &c., 7, St. Mildred's Court, E.C.  
SECRETARY AND OFFICES.—HORSLEY WOODS, 33, Queen Victoria Street, E.C.

### OBJECTS OF COMPANY.

This Company has been formed to acquire and work an important mining property situated at Ohui, in the Tairā District of the Thames Peninsula, New Zealand, about nine miles from Waikauri and about a mile from the coast, comprising an area of about 45 acres, held under the usual mining leases as follows:—

Maori Dream ..... about 15 acres  
Ohui ..... " 15 " " "  
Morning Light ..... " 11 " " "  
..... 45 acres

### REPORTS.

The official report made to the Minister of Mines, New Zealand, for the year ending March 31, 1895, and the developments made to date, together with the reports referred to above, show that there is every probability of satisfactory returns being obtained by the systematic opening up of the property.

On Page 10 of the Official Mining Report of 1895, it is reported as follows:—

No. 2 Ore from Ohui, East Coast (forwarded by McGregor and Party).

"This is a sample of moderately hard quartz, quite free from metallic sulphides, and containing only a small proportion of iron oxides and clayey matter; the whole of the ore weighing about 2 tons was dried and then crushed; the first portion crushed, amounting to nearly a ton, was treated by the Cyanide Process, and the second portion (nearly the same in weight) was subjected to raw hot-pan amalgamation with chemicals, partly for comparative purposes, but chiefly on account of the difficulty experienced in separating the cyanide solutions from the leached pulp, a result due to extreme fineness to which the ore was reduced in our two stamper batteries. The assay value of the second portion was much higher than that of the first, due to the inclusion of three bags of gold-bearing quartz."

### ABRIDGED PROSPECTUS.

No. 1.—2,115 lbs. treated by Cassel process.				Recovery.	
Assay Value.					
Oza. dwts. gra.					
Bullion.....	4	4	10	per ton.	
Gold.....	4	4	10	85 per cent.	
Silver.....	35	2	10	48 "	
Value.....				£19 10 0 per ton.	
No. 2.—1,986 lbs. treated by pan amalgamation.				Recovery.	
Assay Value.					
Oza. dwts. gra.					
Bullion.....	51	12	0	per ton.	
Gold.....	8	14	21	67 per cent.	
Silver.....	41	17	3	44 "	
Value.....				£18 6 9 per ton.	

Mr. A. H. Richards (Thames School of Mines, Kuaotunu), Battery Manager, reported on the property, for Mr. T. O. Kerry, in August, 1895, and states:—"They \* \* \* are the best Claims in the District. 8 tons of quartz and 3 tons of surface mullock were sent to Kuaotunu for treatment, and the following is the result:—  
"8 tons of quartz yielded 24 oz. of retorted gold.  
"3 tons of mullock yielded 2 oz. of retorted gold.  
"Without the tailings."  
"Mr. Richards also states:—  
"I am informed that the reefs are large and easily worked, and ample water for motive power."  
"Mr. J. H. Garrett, Certified Mining Engineer, Auckland, in a report to Mr. A. Burcher, in October, 1895, states:—  
"Adjoining the property there are three large outcrops of quartz, locally termed 'Blows.' In my opinion these are simply the outcrop of reefs. These have a north-easterly bearing, and must necessarily pass through the Ohui claim, or thereabouts. I am also of opinion that the reefs found upon the pro-

perty, upon which I am reporting at present, are a continuation of the 'Waikauri' reefs. As regards present working, there is water and firewood conveniently situated."

### TERMS OF PURCHASE.

The price to be paid by the Company for the properties has been fixed by the vendors (Howard, Childs, Parkes, and the Anglo-French Gold Fields of Australasia, Limited, who are selling at a profit) at £100,000, payable as to £10,000 in cash, £30,000 in fully-paid shares, and the balance in cash or fully-paid shares, or partly in cash and partly in fully-paid shares, at the option of the Directors. This will leave 30,000 shares available for providing Working Capital, 1,000 of which are reserved for future issue.

### CONTRACTS.

The following Contracts have been entered into, viz.:—  
Contracts dated March 30 and June 24, 1895, between Thomas Caradoc Kerry and Howard Childs Parkes.  
A Contract dated May 22, 1895, between Howard Childs Parkes and the Anglo-French Gold Fields of Australasia, Limited.  
A Contract dated June 25, 1895, between Howard Childs Parkes and the Anglo-French Gold Fields of Australasia, Limited, and the Company.  
These Contracts, together with the Memorandum and Articles of Association and copies of the various Reports referred to in this Prospectus, and upon which the statements herein are based, can be inspected at the Offices of the Solicitors.  
The Vendors have entered, or may enter, into agreements and arrangements with third parties with respect to the issue of the Company and the guarantee of the subscription of a portion of the Capital of the Company, to none of which the Company is a party. Applicants for shares will be deemed to have had notice of their nature and contents, and to have waived their right (if any) to any particulars of these agreements and arrangements, whether under Section 35 of the Companies Act, 1887, or otherwise.  
The Vendors will pay all expenses of, and incident to the promotion and formation of the Company up to and including allotment.  
Prospectus and Forms of Application can be obtained from the Bankers, Brokers, Solicitors, and at the Offices of the Company.  
July, 1895.

CAPTAIN OATS, in his cable report on the properties to be acquired by this Company, says:—"All these properties occupy, undoubtedly, a very good position in the line of best mines. I can strongly recommend them to the investing public as a perfectly sound speculation." The Resident Manager, under date May 19, reports:—"Struck good lode, 23 feet in width, Lease 1334, showing visible gold."

The LIST of APPLICATIONS for Shares will OPEN on SATURDAY, July 11, 1896, and will CLOSE on TUESDAY, July 14, for TOWN and COUNTRY.

## THE IVANHOE CONSOLS PROPRIETARY COMPANY, LIMITED.

Incorporated under the Companies Act, 1882 to 1893, whereby the liability of the Shareholders is limited to the amount of their Shares.

### CAPITAL

£125,000.

In 125,000 Shares of £1 each of which £2,000 Shares are now offered for public subscription, payable—2s. on Application, 5s. on Allotment, 5s. one month after Allotment, and the balance in Calls not to exceed 5s., as and when required at intervals of not less than one month.

### DIRECTORS.

RALPH S. ARCHBOLD, Director United Gold Reefs (Limited).  
W. J. FLINT, Director Eagles Nest Gold Mining Company (Limited).  
D. E. INGLES, Director Gold Consols (Limited).  
P. M. DE MIREMONT, Director Parent Syndicate of Western Australia (Limited).  
A. LELAND NOEL, Director Midland Railway of Western Australia (Limited).

BANKERS.—Messrs. BROWN, JANSON, and Co., 37, Abchurch Lane, E.C.  
SOLICITORS.—Messrs. H. W. COOPER and SONS, 5, Victoria Street, S.W.  
BROKER.—Messrs. WOOLNER and Co., 6, Drapers' Gardens, E.C.  
AUDITOR.—W. W. WRIGHT, Chartered Accountant, 6, Great Winchester Street, E.C.  
SECRETARY AND OFFICES.—G. T. VERNY, Dashwood House, New Broad Street, E.C.

### ABRIDGED PROSPECTUS.

This Company is formed to acquire and further develop four mining leases known as the Ivanhoe Consols Amalgamated, Tribby, and Little Billie, numbered respectively 1333, 1334, 1411, and 2491E, comprising an area of 54 acres or thereabouts, situated in the Hannan's district, Kalgoolie, Western Australia.  
The Ivanhoe Consols Amalgamated adjoins Hannan's 100 Acres, and the Tribby and Little Billie adjoin the Bon Accord Mine.  
These leases have been reported upon by Captain Oats, Messrs. Stapleton, Nyman, and Bibby, whose reports, or extracts therefrom, are set out below, and attention is drawn to their favourable character.  
Attention is also drawn to the fact that Captain Oats and Mr. Stapleton report that an abundance of water for crushing is available, and that timber for all mining purposes is in plentiful supply. The value of an abundant supply of water in such a district as Kalgoolie can hardly be exaggerated.  
The Railway to Kalgoolie is almost completed. When it is opened for traffic the expense of moving machinery, supplies, &c., will be considerably reduced, and the development of the mines rendered much less costly.  
Reports of rich finds are constantly being received from this district, one of the latest and most important, as showing the permanence and richness of the reefs in depth, being one from the Great Boulder Mine, where a rich strike has been made at a depth of 200 feet.  
Mr. George Gray, M.E., during the course of his lecture on the Great Gold Fields of Western Australia, delivered at the Imperial Institute on February 20, 1895, speaking of the Hannan's Goldfield, remarked:—"In scarcely any part of Hannan's district is it possible to take a series of prospects from the lode formations without getting good results, and in many parts beneath the superficial alluvial deposit is to be found a heavy cement capping, which invariably carries gold."  
At the 150 feet level developments are proving that the lodes gain greatly in strength and at 200 feet the filling of the fissures is practically a quartz formation, well defined, strongly mineralized, and increasing in gold values. In fact, so far as my knowledge and observation extend the mines have shown no signs of weakness as depth has been reached. On the contrary, the chutes are increasing in length and strength, and the gradual change in the condition of the quartz 50 feet below water level proves, in view of past practical experience, that the reefs are permanent and will live in depth.  
Not only do the rich chutes exist, as I have attempted to describe, carrying a grade of ore to an extent which I think is unequalled in the history of gold mining, but there are also the lode formations, varying in width from 10 feet to 40 feet, carrying gold from wall to wall.  
Attention is drawn to the fact that the Company will acquire four separate leases, and the policy of the Directors will be to develop and resell at a profit one or more blocks, as opportunity offers, retaining the remainder to be worked by the Parent Company, or dealt with as circumstances may suggest.  
The following reports have been received from—  
Captain Oats, Manager of the Associated Gold Mines of Western Australia, Brookman's Boulder, Colgarie Mine, and Iron King, &c., &c., cables as follows:—"Report Leases 1411 and 2491. The property is situated at Kalgoolie, lying to the south 2 miles from Great Boulder, on the line of auriferous belt; the situation of the property generally is excellent. There is a strong ironstone ridge of ferruginous gold-bearing quartz. There are two shafts on the property for cutting and exploring the lode. General indications are very promising. The property is well worthy of further investigation, and my opinion is, on the whole, favourable. 1333 and 1334 are on the east of former property. The property has not been worked to any great extent, but position decidedly good. The adjoining property on the North have discovered a very powerful lode bearing through these leases.—Summary. All these properties occupy undoubtedly very good position on the line of best mines. I can strongly recommend them to the investing public, as a perfectly sound speculation. There

is a plentiful supply of timber for mining purposes, also an abundance of water for crushing obtainable."  
Mr. Bibby, M.E., and Mr. Stapleton also report.  
The following are extracts from the cable reports of—  
Mr. Robert Syman, late Manager of the Clyde Gold Mining Company, in his report, says:—"I consider the mines very valuable."  
Since the above gentleman reported on these properties, the Resident Manager, under date May 19, reports:—"Struck good lode, 23 feet in width, lease 1334, showing visible gold."  
The price has been fixed by the Gold Consols, Limited, the Vendors to the Company, at £100,000, payable as to £10,000 in cash, £30,000 in Shares, and the balance in cash or fully-paid Shares, or partly in both at the option of the Directors, leaving 30,000 Shares available for Working Capital. The Vendors agree to pay all expenses (except brokerage) connected with the formation of the Company up to allotment.  
The Contracts and Reports and the Memorandum and Articles of Association may be seen at the Offices of the Company's Solicitors.  
Certain Agreements and arrangements have been or may be entered into as to the formation of the Company, and the subscription of its capital, to none of which the Company is a party, and applicants for shares will be deemed to have notice of the contents of these, and to have waived their right, if any, to any particulars thereof, or to any further specification of the Agreements under which the properties and options have been secured, whether under Section 35 of the Companies Act, 1887, or otherwise.  
Messrs. Flint and Ingles are Directors of the Gold Consols, and are as such interested in the purchase.  
Prospectus and Application Forms may be obtained from the Bankers and Brokers, and the Offices of the Company.  
London, July 10, 1895.

## OUR SOUTH AFRICAN LETTER.

(BY OUR OWN CORRESPONDENT.)

JOHANNESBURG, JUNE 15.

THE week just expired has been, business speaking, the best we have had since December last; the tendency of the market is towards that boom which everybody is expecting, and which sooner or later is bound to come.

The declaration on Wednesday of the May output in 195,008 ounces has taken everybody by surprise—a slight increase on the previous month's return was expected—but nobody would have dreamt of 20,000 ounces more.

Of course my remarks about the reliance of the returns, now that two different sources contribute to the official data of the monthly output, have proved again to be true.

The Association of Mines, in its declaration of output, which includes the return of only a few companies, made a mistake of about 6000 ounces, out of a grand total of 34,372 ounces, and sent up the total of the two institutions to 201,313 ounces; these figures having been cabled, posted, &c. anywhere and everywhere, had to be contradicted here and at home. The impression produced on the market by these monthly blunders has been utterly bad, and the Star, in joining the chorus, did not spare the poor Association of Mines. Quite right, too, I think.

I trust that the gentlemen at the head of this institution will be more careful about figures in their next declaration, and save the inconvenience they have brought us since their establishment.

The Association and the Chamber of Mines will never join again. What at first it was thought to have produced the split, now that the Chamber of Mines have adopted new rules to meet the wishes of the dissenters, has no reason to be accepted any longer.

Political reasons have brought the secession, and, therefore, all that could have been healed by brought up by internal discrepancies of administration, now has reached the crisis stage, and no possible understanding is to be expected when politics come to the fore, as it is admitted now. On Saturday last at a meeting of the Rand Mining Estates (Limited), it was decided to increase the capital of the company to £40,000. They held 2337 claims and 2400 morgens of ground. Their properties had been very favourably reported upon by Messrs. Gloyas, Draper and Davey.

It was also decided to purchase claims and properties on the several farms, and to pay for them entirely in the shares of the company.

In a few days time, charts and reports of their properties will be handed to the Press, and then we shall know something more about them.

The first ordinary meeting of the Molyneux Mines Consolidated was held on Monday afternoon. The report of the directors does not say very much about the future of the property; it admits that the formation is very irregular, and that very frequent breaks in the reef have been experienced, and that a lot of money is still required before they would find ore in payable quantities. Shareholders of nervous dispositions, and interested investors in the Alexandra Estate Company must feel just now rather, and what is better, favourably upset by the startling news coming from the West Rand, and more especially from the Alexandra's properties.

It seems that a reef has been struck, and it is declared that the true main reef has at last been discovered, and struck at two other points on the same property.

The ninth annual report issued by the Department of Mines is just now to hand. Gleanings from it are very interesting, and speak for themselves.

The income of the Department, which was £330,809 in 1888, had reached £1,502,231 in 1895.

The growth in the mining operations during the year has been a remarkable one. For the Government it was £156,883 in 1894, the total increase in 1895 was £843,524. The total income from claims for 1894 was £1,056,658, while for 1895 it was £1,818,571, showing an increase of fully two-thirds on the previous year.

During the year public diggings have only been proclaimed on Leipardville and Witfontein, on districts of Krugersdorp and Palmietfontein, and Buffelsdorp in the Potchefstroom district.

I fully agree with him that the allotment of claims on proclaimed ground is certainly not advantageous to the mining industry, because it was not worth while to work machinery and to develop the number of claims (six) which, according to the regulations, could be regarded as one block. He gives this as the reason why the majority of the claims just allotted were, at the end of the year still, as they are now, unworked.

The State Mining Engineer's annual report has also been issued, and its statistics prove the steady advance in the development of the gold industry in this country, which may claim now the first place amongst the gold-producing countries in the

world with regard to the yield. From 1884 up to the end of 1895 the total yield has been 9,719,170 ounces, of the value of £33,500,000. In 1895 in connection with the gold mining industry 7523 whites and 54,127 coloured people were working above and below ground, compared with 5652 whites and 42,504 coloured people in 1894.

The Witwatersrand Gold Fields produced in 1895 about 89.77 per cent. of the total output of the country, viz., 2,223,006 ounces, valued at £7,693,371. At the end of 1895, in force on the Rand there were 92,035 prospecting and 3283 digging licences.

The capital invested in the mining industry, so far as it could be ascertained, and exclusive of mines worked by syndicates or private people, was reckoned at £43,544,983, compared with £24,702,815 for the previous year.

THE BARBERTON GOLD FIELDS SOUTH (LIMITED).—Subjoined is an extract from the Gold Fields News, Barberton, of June 9:—"Dick's Luck Mine. This property, situated on the north side of the Komati River and distant about 8 miles from Steynsdorp, is opening up well. Good mining is being put in at various points. The main shaft is 60 feet deep, and the reef was intersected by a short crosscut, from which point driving on the course of the reef both north and south has proved very satisfactory. A winze 40 feet has been sunk from the bottom of the south drive proving the reef at this depth to be fully 4 feet wide and panning well. During the past month a rich strike has been made and a new trial shaft sunk, showing the reef to be 3 feet 6 inches wide, carrying rich visible gold, a sample of which has been sent to the agent of the company, Mr. A. Heller, Barberton, for inspection."

THE ASSOCIATION OF MINES OF THE SOUTH AFRICAN REPUBLIC have cabled to their London agents, the Robinson South African Banking Company (Limited), that for the month of June an output amounting to 33,707 ounces was obtained by the following companies:—Roodpoort United Main Reef, Meyer and Charlton, Princess Estate, Van Ryn, George Goch (Amalgamated), Wemmer, Langlaagte Estate, Block B Langlaagte Estate, Langlaagte Star, and New Midas. This compares with 34,372 ounces in the preceding month. The return of the Lancaster Company is not included, and the return of the New Midas Company is added.

THE CHAMPEON REEF GOLD MINING COMPANY OF INDIA (LIMITED) has sold the gold produced in May for £25,682 12s. 6d.



The List of Applications for Shares will close for both Town and Country on Thursday, July 16, 1896.

An interim dividend for the last three months has been declared on the Ordinary Shares at the full rate of 15 per cent. (For further particulars see report of meeting of July 7.)

## HANNAN'S DEVELOPMENT AND FINANCE CORPORATION, Ltd.

Incorporated under the Companies Act, 1862 to 1890, whereby the liability of the shareholders is limited to the amount of their shares.

Capital £150,000, in 147,000 Ordinary Shares and 3,000 Deferred Shares of £1 each.

Further issue of 50,000 Ordinary Shares at 5s. premium, payable as follows: 2s. on Application, 5s. on Allotment, 5s. on August 1, and the balance on Sept. 29. The Ordinary Shares are entitled to a Preferential Dividend of 15 per cent., and an equal division of the remaining profits with the Deferred Shares.

Each Subscriber to this Issue for every 2500 Ordinary Share capital will have the right to one Deferred Share at £10. Applicants can pay up in full on allotment, and Shares will then rank for dividend on the amount actually paid.

**Directors**—Major-General Bates (Chairman of the Finance Corporation of Western Australia Limited), Richmond House, Acton, W.; G. G. Elrington, Esq. (Director of the Colonial Explorations, Limited), Green Lodge, Richmond, Surrey; A. G. Shoolbred, Esq., 38 Lancaster Gate, London, W.; Albert King, Esq., 60 Aldermanbury, London, E.C.; Colonial Merchant.

**Advisory Board in Western Australia**—H. E. Keep, Esq., M.L.A., Perth; R. F. Shroli, Esq., M.L.A., Perth.

**Bankers**—London: Messrs. Brown, Janson & Co., 32 Abchurch Lane, London, E.C.; West Australia: Union Bank of Australia, Limited, and Branches.

**Solicitors**—Messrs. Taunton & Dade, 21 Cornhill Avenue, London, E.C.; Messrs. Parker & Parker, Perth, Western Australia.

**Broker**—H. W. Walmisley, Esq., 18 Aus in Friars, London, E.C., and Stock Exchange.

**Auditors**—Messrs. Attree, Wilson & Attree, 41 Coleman Street, London, E.C., Chartered Accountants.

**Secretary**—Mr. H. Herwin.

**Offices**—5 Moorgate Street Buildings, Moorgate Street, London, E.C.

### ABRIDGED PROSPECTUS.

This Corporation was registered on the 5th day of March, 1896, for the purpose of organising and carrying on the business of a Development and Finance Corporation on similar lines to other Exploring and Development Companies, and principally for the purpose of acquiring options on mining and other properties, and dealing in shares of mining companies; as well as engaging in the formation and issue of mining companies, the principal field of the Company's operations being the Western Australian goldfields.

The business of the Corporation also comprises that of a financial and general agency business, the underwriting of new issues of proved undertakings, and the investment of capital in companies, the success of which is practically assured.

No public issue has yet been advertised, the necessary capital to commence operations having been subscribed privately, which has enabled the business to be completely organised, and afforded an opportunity of establishing the undertaking on a sound basis, and proving the satisfactory and profitable nature of the operations of the Corporation.

Although the Corporation has been at work for such a short period, the directors have been able to secure many important and valuable mining interests in the Hannan's District, which is now generally believed in the best informed quarters to contain by far the richest auriferous deposit in the whole of Western Australia; also subsidiary Companies have been formed, and valuable options and contracts secured, from which profits have resulted and a dividend distributed, leaving a considerable margin for the payment of additional dividends. Quite recently the Hannan's North Cressus Gold Mining Company, Limited, has been formed, from which a large return in the shape of dividend in cash and bonus in shares will accrue to the shareholders of the Corporation.

Several other leases owned by the Corporation are in a sufficiently advanced state of development to justify their re-sale to subsidiary companies.

A large quantity of business is in progress, and from contracts already concluded, very large profits are assured. The Corporation has also at the present time under offer several valuable leases, as well as options and contracts, which afford exceptional opportunities for a large extension of the business and the profitable employment of an additional amount of capital.

In order that the Corporation may be placed in a position to secure additional leases, and to complete the formation of subsidiary companies, the directors have decided to make a further issue of shares and to invite public subscriptions to the same.

The increased strength in the resources of the Corporation afforded by the funds arising from this issue will assure success to its operations, and almost entirely eliminate any speculative element from the transactions, at the same time enabling the Corporation to secure the additional profits.

The 21 Deferred shares of the Corporation are now being dealt in on the London Stock Exchange at between £9 15s. and £10 5s., and the £1 Ordinary shares at between £1 7s. 6d. and £1 12s. 6d.

As will be seen from the foregoing, the Corporation has already made handsome profits, and from the business in hand these will be largely augmented.

In view of the exceptionally strong position in which the Corporation now stands, the present issue of the Ordinary shares will be made at the price of £1 5s. per share, and subscribers for 200 Ordinary shares will have the privilege of securing one Deferred share at £10.

Particulars of the properties owned by this Corporation and full prospectuses can be obtained from the Bankers, Brokers, and at the Offices of the Corporation.

## LATEST FROM THE MINES.

### CABLEGRAMS AND TELEGRAMS.

**ACHILLES GOLD FIELDS.**—The directors have received the following cablegram from their managing director at the mine:—"Have struck pay ore No. 2 level, east middle lode."

**APANTOO GOLD.**—During the month of June mill crushed 353 tons quartz, yielded 228 ounces gold.

**ALBION (Transvaal).**—The following cable has been received from the manager:—"I have received your letter dated June 6. I estimate the amount of ore in sight at 7,400 tons. Have started pump. Albion works well. Will begin to sink the shaft as soon as possible. Have commenced driving Talcoose."

**BUNYIP.**—The following cable has been received from the manager:—"The main shaft has been sunk to a depth of 50 feet, now being timbered No. 1 inclusive shaft, have commenced to drive on the lode. The ore is high grade. Assay value of gold per ton, 11 ounces."

**BAKER'S CREEK.**—Cable advice has been received from Adelaide that a further dividend (44th) of 1s. per share has been declared, payable there on the 29th inst.

**BALAGHAT MYSORE.**—The following cablegram has been received from Mr. Richards:—"306 ounces of gold obtained from 2730 tons of tailings."

**BARRETT.**—The mine manager cabled on the 2nd inst.:—"June gold 503 ounces. Part of the new machinery in course of erection; will commence running to-day."

**BLOCK B. LANGLAAGTE.**—Production for June by cable:—"Mill. Stamps running, 75; ore crushed, 7530 tons of 2000 lbs.; gold retorted, 1880 ounces.—Tailings. Cyanide process. Tons treated, 4730 tons of 2000 lbs.; gold recovered, 330 ounces.—Concentrates. Cyanide process. Tons treated, 172 tons of 2000 lbs.; gold recovered, 301 ounces; total gold recovered, 2511 ounces."

**BRILLIANT AND ST. GEORGE UNITED.**—The following cablegram has been received from the directors:—"Have crushed during the month 1680 tons of quartz for 2668 ounces of gold. Have declared the usual monthly dividend of 6d. per share, payable on July 22. The approximate value of this return is £9200."

**BASS AND FLINDERS.**—A cable has just been received from the manager of the Bass and Flinders Gold Mining Company, stating that an offer has been made locally for 12 acres of the company's property—viz., £6000 in cash, and one quarter's interest in new company. This offer is now under consideration by the board.

**BIG VALLEY CREEK.**—Cablegram from the acting manager:—"Drainage tunnel of creek progressing well; outlook good."

**BROKEN HILL PROPRIETARY.**—Copy of cable dated Melbourne, July 7. Received same date 10 a.m.:—"Shares £2 7s. 6d., buyers."

**BRILLIANT BLOCK.**—Cablegram from the head office in Charters Towers:—"Have crushed during the month 1988 tons of quartz for 1355 ounces gold. Approximate value, £4675. The profit on the run is £800."

**BURMA RUBY.**—The result of the mining for the month of June was 19,000 loads washed, producing rubies valued at Rs. 51,000. The output is affected by the heavy rains;

**BROKEN HILL PROPRIETARY.**—Copy of cable, dated Melbourne, July 9:—"Shares £2 8s. 6d., buyers."

**CITY AND SUBURBAN.**—Last month's crushing yielded 8296 ounces.

**CUMBERLAND GOLD.**—The following cablegram has been received:—"In the month of June, tailings works recovered 212 ounces from 306 tons at a cost of £270; the estimated value is £440."

**CHIAPAS.**—Copy of cable from manager:—"During June the concentrating mill ran 20 days, 1150 tons of ore were crushed, yielding 53 tons of concentrates. The stamp mill ran 28 days, 825 tons of tailings were crushed, yielding 128 ounces of gold. Owing to want of water running on low grade ore. Have struck ore pine drift."—Office note. Pine drift is the deepest working in the mine.

**CLUTHA.**—In a cable received, the manager says:—"The mine looks exceedingly well. Success is now assured. Splendid body of ore."

**CASSEL COAL CO.**—The output for the month of June was 24,000 tons; profit, £4992.

**DURBAN-ROODEPOORT.**—The following results for June have been received by cable:—"Quartz milled 9315 tons, 70 stamps, 27 days, 4051 ounces; tailings treated 5540 tons, 27 days, 1553 ounces; total 5604 ounces."

**DUNDERBERG GOLD.**—The following cable has been received from the manager:—"New developments justify 20 stamp mill. The vein in rise 10 feet wide, 5 ounces per ton; samples from winze assayed 35 dwts. per ton."

**EAST MURCHISON UNITED.**—The latest news from this company's property is that there are about 1000 tons of stone at grass; that a 10 head battery is in course of erection, and that the winding and pumping gear has almost all arrived on the ground.

**FREDERICK THE GREAT.**—Copy of cablegram received from Bendigo, dated July 6:—"Have cleaned up after crushing 800 tons of quartz; gross yield 7 ounces. We are now opening up higher on the vein, where gold has been seen."

**GLENCAIRN MAIN REEF.**—The Johannesburg Consolidated Investment Company announces receipt of the following cable from the above company:—"Production for June 3468 ounces; 100 stamps, 23 days."

**GELDENHUIS ESTATE.**—A cablegram has been received from the head office at Johannesburg, stating the following results for last month:—"Crushed, 15,097 tons; obtained from mill, 5141 ounces of gold; obtained from concentrates by cyanide, 270 ounces of gold; obtained from tailings by cyanide, 1478 ounces of gold; total, 6889 ounces of gold; profit for month, £3500."

**GRASKOP.**—Return from the mine for the month of June:—"Ore treated 243 tons, yielding 180 ounces of gold. Total yield, 1st January to 30th June, 1246 ounces."

**GELDENHUIS MAIN REEF.**—Result of June crushing:—"2370 tons crushed, yielding 1201 ounces of gold; 1385 tons treated by cyanide, yielding 383 ounces of gold; total, 1589 ounces. Profit for the month, £1554."

**FEEIREIRA GOLD.**—Copy of cablegram received from Johannesburg:—"Results for June: Crushed, 10,208 tons; bar gold extracted, 8225 ounces; concentrates caught, 280 tons; assay value of concentrates 6 ounces 15 dwts. fine gold per ton, equal to (say) 1755 ounces.—Cyanide works. Bullion produced from tailings, 3438 ounces; total gold from all sources, 13,418 ounces."

**GINSBURG.**—The Johannesburg Consolidated Investment Company announces receipt of the following cable from the above company:—"Production for June 1015 ounces. 10 stamps, 30 days."

**GOLDEN FEATHER.**—The following cablegram has been received from the company's general manager, Mr. G. H. Evans:—"Hope to be able to turn the river in about one week."

**GREAT BOULDER PROPRIETARY.**—Crushing returns for fortnight ending July 4: At company's own battery, Great Boulder Mine (20 stamps) 660 tons crushed; yield in gold in ounces, 2585; at public leased battery (five stamps) 190 tons crushed; yield in gold in ounces, 573; total, 850 tons crushed; total yield in gold in ounces, 3158. Moderate rain has been falling since last Friday.

**GREAT BUNYONG ESTATE AND GOLD.**—Alluvial shaft has reached a depth of 180 feet. We are now in country rock. Good progress is being made at the rate of 4 feet per day. Quartz shaft has reached a depth of 350 feet. Pushing on to strike chute below. Good progress is being made. Water can be kept down without difficulty.

**GEORGE GOCH AMALGAMATED.**—The following cable is just to hand advising work done during June:—"9031 tons crushed, yielding 2035 ounces gold and 1705 ounces from tailings."

**HANNAN'S KING (Brownhill).**—The following cable report has been received from our mine manager on the property at Kalgoorlie:—"No. 2 shaft. Have sunk another 30 feet in this shaft since my last report. The lode improves with each foot sunk. It is undoubtedly the Richmond lode showing the same formation as the Brownhill lode."

**HARMONY GOLD AND LAND.**—The company's mining manager on the Murchison Range reports by cable of July 6 that he is advancing his drive in the lower adits at Mashambane Hill, but that although he has driven a distance of 35 feet he is not yet through the reef.

**HAURAKI ASSOCIATED.**—The following cable has been received from the local committee at Auckland, N.Z.:—"Ship battery as early as possible. The prospects generally continue to improve. Commenced to open up in the lower level."

**HENRY NOURSE.**—Last month's crushing mill ran 29 days; crushed 8200 tons, produced 4696 ounces; 5760 tons cyanide treated produced 1953 ounces; total, 6649 ounces.

**KOFFYFONTEIN.**—The returns for the month of June are 4150 carats, including a stone of 931 carats recovered.

**KURNALPI.**—The directors have received information by cable that the shaft is now down 116 feet, and that water has been reached; also that the machinery should immediately be in working order. From advices received by mail the reefs look well, and assays from various parts show an average of 2 (two) ounces of gold per ton throughout.

**LANGLAAGTE STAR.**—Production for June (by cable):—"Mill. Stamps running, 60; ore crushed, 6000 tons of 2000 lbs.; gold retorted, 1083 ounces.—Tailings, cyanide process. Tons treated, 3995 tons of 2000 lbs.; gold recovered, 408 ounces. Tons gold recovered, 1491 ounces."

**LANGLAAGTE ESTATE.**—Production for June by cable:—"Mill. Stamps running, 160; ore crushed, 18,655 tons of 2000 lbs.; gold retorted, 6195 ounces.—Tailings. Cyanide process. Tons treated, 11,440 tons of 2000 lbs.; gold recovered, 1614 ounces.—Concentrates. Cyanide process. Tons treated, 485 tons of 2000 lbs.; gold recovered, 1322 ounces; total gold recovered, 9131 ounces."

**LYDENBURG ESTATES.**—The following advices have been received:—"Mooifontein. A nice looking reef and several outcrops have been found assaying up to 3 ounces.—Paardekraal. A vertical reef 2 feet wide has been struck showing gold. Id.—Zwartfontein. The reef and outcrops can be traced for miles through the company's property, including Lichtfontein and Kijikopje. Samples have been received in London showing visible gold, which is now being assayed. The following has also been received:—"Doornkraal. Prospectors have struck a

large vertical reef; samples have been sent for assay.—Zomer-plaats. Struck small flat reef 4 inches thick, dipping into mountain, assaying 7 dwts. 12 grains.—Haartebeestevlakte. Opening gold-bearing lode running through north-east corner; good prospects."

**LYDENBURG MINING ESTATES.**—Results for June: From mill. Crushed 5215 tons, yielding 3508 ounces of gold. From cyanide works. Treated 2659 tons, yielding 2262 ounces of gold. Total yield, 5770 ounces of gold. Total value of month's output, £14,937.

**LYDENBURG ESTATES (Mooifontein).**—The following is the result of the assay on samples taken from this property:—Samples No. 1, 2 dwts.; No. 2, 2 dwts.; No. 3, 4 dwts.; No. 4, 3 ounces 14 dwts.; No. 5, 16 dwts.; No. 6, 6 dwts.

**LOMATIE (Lydenburg) EXPLORATION.**—The manager having cabled for a small mill to be sent out, the directors have given orders for the shipment to be made as soon as possible.

**LE CHAMP D'OR FRENCH.**—Crushing for the month of June. The following cable has been received from the manager of the mine at Johannesburg:—"During the month mill worked 26 days, crushed 6100 tons, yielding 2249 ounces; cyanide treated, 4200 tons, yielding 825 ounces. Total 3074 ounces."

**LISBON-BERLYN.**—Cable received from the manager gives the following results for the month of June:—"Ore mined, 2000 tons; treated by cyanide, 1175 tons; bullion recovered, 655 ounces; estimated value, £1975; estimated expenses, £1850. Treatment by cyanide stopped for repairs to plant 7 days."

**MEYER AND CHARLTON.**—Result for month of June:—"Tons crushed, 8262; gold won, 2686 ounces; extracted from tailings, 1423 ounces; total, 4109 ounces; profit for month, £3701."

**MONASTERY DIAMOND MINES AND ESTATE.**—A cable received 8th inst., states:—"304 loads last week yielded 80 carats."

**MOUNT MORGAN (Queensland).**—Results for the month of June:—"Tons chlorinated, 8357; gold returned, 10,734 ounces."

**MENZIES "CRUSOE" GOLD CLAIMS.**—Cable information has been received from the manager at the mines to the following effect:—"Making fair progress, development works; the slopes generally are looking well; have commenced foundations for our own new battery."

**MONTANA.**—By cablegram from the mine the directors are informed that the total output for June was 6100 tons of ore, which contained—Gold, 2060 ounces, and silver 10,200 ounces. The estimated realisable value of the same is \$47,700.—Expenditure. Working expenses on revenue account, \$31,900; outlay on developments, \$5000; extraneous expenses, \$500; permanent improvements and machinery, \$300; total, \$37,700; estimated net result, \$10,000. Warrants for the dividend of 3d. per share, free of income tax, will be passed on the 14th inst.

**MYSORE.**—The directors have received a telegram from the mine giving the return of gold for the month of June as follows:—"5323 tons of quartz produced 7429 ounces of gold; 4380 tons of tailings produced 1150 ounces of gold; cleanings, 207 ounces of gold; 1610 tons of tailings (cyanide process) produced 169 ounces of gold; total production for the month, 8955 ounces of gold."

**MYSORE REEFS (Kangundy).**—Cablegram from the mine, dated July 6, gives last month's return of gold as follows:—"216 tons of ore crushed has yielded 94 ounces of retorted gold. Decrease owing to want of water."

**MYSORE WEST AND MYSORE WYNAD CONSOLIDATED.**—The manager cables the result of crushings for the month of June as follows:—"Tank Block. After a mill run of 434 hours, 1000 tons, 422 ounces of gold. Mill shut down for 11 days; one cholera."

**NEWHOUSE TUNNEL.**—The following cable has been received from Denver, dated July 2:—"We have driven during the past month 303 feet."

**NEW GUADALCAZAR QUICKSILVER.**—A cable has been received from the mines stating that the production of quicksilver last week was 3000 lbs., equal to 40 flasks.

**NEW QUEEN.**—Cablegram, dated Charters Towers, July 6:—"Started crushing on July 4."

**NEW CRESUS.**—Production for June, 60 stamps, 26 days, 2454 ounces.

**NEW HERIOT.**—Last month's crushing yielded 6014 ounces.

**NIGEL.**—Last month's crushing yielded 1240 ounces battery; 1034 ounces cyanide; total, 2274 ounces.

**NEW RIETfontein ESTATE.**—The Johannesburg Consolidated Investment Company announces receipt of the following cable from the above company:—"Production for June 2150 ounces. 50 stamps, 23 days."

**NEW ZEALAND TALISMAN.**—The following cable has been received from Mr. W. A. Messer:—"With the present incomplete mill we can only treat 20 tons per week; shall be able to treat 100 tons after improvements, which will be finished in three weeks. The ore we are now milling is of an average value of £5 per ton. I am sure it is a mine with a great future before it."

**NORTH CHARTERLAND EXPLORATION.**—The directors have received the following cable from Lieut.-Colonel R. G. Warton, F.R.G.S., their administrator in Africa:—"Reports are favourable from Missals mines. Gold has been discovered by Carl Wieser. Further particulars will follow later."

**NUNDYDROOG.**—The directors have received a telegram from the mine giving the return of gold for the month of June as follows:—"2410 tons of quartz produced 3431 ounces of gold; 680 tons of tailings produced 158 ounces of gold; total production for the month, 3589 ounces of gold. Epidemic apparently at an end on the mine."

**ORIENT GOLD MINES.**—The following cablegram, dated Cairns, Queensland, July 3, has been received from the manager:—"Work is being pushed ahead. Without any money in hand. Send as soon as possible £250." (This amount has been remitted.)

**PALMAREJO.**—For June. Crushed 1100 tons, panned 980 tons, producing \$24,900; expenses for the month \$25,700. The usual want of water at this time of the year interfered with the working of the mill, but the scarcity was less than usual. Mill resumed full working on the 26th.

**PRINCESS ESTATE.**—Result for month of June:—"Crushed, 3486 tons; gold won, 1650 ounces; extracted from tailings, 624 ounces; total, 2274 ounces."

**PREMIER TATI MONARCH.**—The directors of this company have received the following cable from their manager at Tati, dated the 8th inst.:—"15 heads of stamps running 26 days, yielded 368 ounces of bullion. Have shipped five bars of bullion worth £1400. By means of a dam water supply greatly increased. At the present time we have 20 heads of stamps running. Shall begin running 25 within the next six days. Native labour supply increasing. Exhaustion of the molasses will be completed within 30 days. Total amount crushed 1270 tons (dry weight)."

**ROSE HILL UNITED.**—Cable report from the mines for week ending July 4:—"Lease 226. Main shaft is down 47 feet, timbered 35 feet. Lodes struck carrying fine gold.—Lease 229. Co. sent has been extended to 30 feet.—Lease 516. Drive has been extended to 24 feet.—Lease 603. Main shaft is down 30 feet; commencing timbering.—Lease 1599. Drive has been



tended to 20 feet; small veins showing gold. We are now employing extra men."

**ROODEPOORT.**—The Johannesburg Consolidated Investment Company announce receipt of the following cable from the above company:—"Production for June, 1214 ounces; 40 stamps, 28 days."

**ROODEPOORT DEEP LEVEL.**—Cablegram states:—"During the month of June the battery ran 25 days, crushed 4175 tons, yielding 1927 ounces." The manager reports continual stoppages, owing to the scarcity of coal, but anticipates increased output for current month.

**ROODEPOORT UNITED MAIN REEF.**—Result for month of June:—Crushed 7644 tons, produced 3166 ounces, cyanide 753 ounces, total 3919 ounces, profit £5020.

**SOUTH KALGURLI.**—The following cable has been received from the manager:—"Have commenced driving crosscut No. 3 assaying 4 ounces per ton.—Quick."

**SAN SALVADOR SPANISH IRON ORE.**—The s.s. *Kottingham* sailed from Santander on the 1st inst., with 1680 tons of this company's ore for the Tyne.

**SHEBA.**—The following cablegram has been received from the general manager for the month of June:—"3850 tons of ore, 6490 ounces; 3450 tons of tailings, 2190 ounces; 93 tons of concentrates, 909 ounces; total, 8589 ounces. The mill has run 27 days; the body of ore is getting poorer in No. 9 level."

**STANHOPE.**—Last month's crushing yielded 1100 ounces.

**ST. JOHN DEL REY.**—The following telegram has been received from Mr. Chalmers:—"Produce for the month of June, 22,500 oitavas, equal to 2593 ounces troy; value £2719; yield per ton 4.6 oitavas (53 ounces troy); water lowered in old excavation 55 feet May, and 115 feet June."

**SALISBURY.**—Last month's crushing yielded 2400 ounces.

**NEW PRIMROSE.**—Production for June:—"9786 ounces; profit, £6394; 160 stamps; 26 days."

**SOUTH MOUNT LYELL.**—The following cablegram, dated Melbourne, July 8, has been received by the London office:—"Good progress is being made. The face is now in hematite iron ore. Red oxide of iron barytes carrying gold and silver. The direction of the lode is south. Have given instructions to sink a shaft in the tunnel. Anticipate strike pyrites body of ore at a moderate depth below this level. Prospects are most satisfactory."

**SILVER KING.**—The following cable has been received from the manager at the company's mines, June:—"Mill worked 26 days, crushed 1950 tons ore, produced 11,500 ounces silver, shipped 11,000 ounces, expenses \$10,000; bullion on hand 6400 ounces."

**THE JUMPERS.**—Results for June: A cablegram has been received from the head office at Johannesburg, stating the following results for last month:—"Crushed, 8206 tons; obtained from mill, 3177 ounces of gold; from concentrates, equal to 350 ounces of gold; from tailings by cyanide, 550 ounces of gold; total, 4077 ounces of gold."

**UNITED IVY REEF.**—A cablegram states that last month's output was 700 ounces. Mill has been working day and night for 17 days, and has crushed 870 tons.

**VICTORIA GOLD MINING ASSOCIATION.**—The following cablegram has been received at the London office:—"275 tons crushed yielded 495 ounces gold."

**WEMMER.**—The result of work done during June is as follows:—"6463 tons crushed, yielding 3072 ounces of gold, 28 days; and from cyanide plant 4875 tons treated, yielding 1011 ounces. Concentrates caught, 148 tons; assaying 75 dwts. (3 ounces 15 dwts.)"

**WEST RAND DEVELOPMENT SYNDICATE.**—The local manager reports by cable:—"Mining work, sinking on the reefs, &c., is so far advanced that I have engaged the services of Mr. Manning, mining engineer, to report and advise on future work laying out the mines, &c. I am forwarding you 56 lbs. of reef matter. We are now busy prospecting for coal. The shaft is 20 feet in depth, passes through a clay slate formation. Prospects very favourable. The reef maintains its average of 15 to 20 dwts. of gold to the ton."

**WOLHUTER.**—Result for month of June:—100 stamps crushed 12,544 tons; produced 4042 ounces, cyanide 1842 ounces, total 5884 ounces.

**WAIHI GRAND JUNCTION.**—The manager cables July 10:—"Grand Junction engine shaft is down 363 feet. Waihi West prospecting shaft. Crosscut is driven 366 feet north; 115 feet south."

**WHITE FEATHER REWARD CLAIM.**—Latest cable advice received from the mine:—"Crushing for the month of June: 209 tons crushed, yielding 474 ounces of gold, average of 2 ounces 3 dwts. 8 grains. This, with the previous crushings, makes a total of 1840 tons, yielding 3976 ounces, average of 2 ounces 3 dwts. 5 grains. No. 1 winze from the 100 feet level to the 151 feet level has opened up strong reefs varying in width from 2 feet 6 inches to 4 feet, averaging 2 ounces of gold per ton. The chute of gold has already been proved for 36 feet at the 151 feet level, and there is every appearance of its continuing. It is a most important feature of the value of the property. In the north drive at the 100 feet level the quality of the ore is improving. The sinking of the main shaft is proceeding vigorously for the purpose of increasing the water supply. The dam has been puddled, and it is believed will now hold water. The erection of the additional 10 heads of stamps is proceeding rapidly. An additional claim, known as the "Uno" No. 3015 E, has been taken under a working option on the recommendation of Mr. F. H. Buckhouse and Mr. Marshall, the present manager of this company, and will be ultimately acquired if developments prove satisfactory."

**ELECTRICITY IN MINING.**—A paper recently read by Mr. Cyrus Robinson, before the Western Pennsylvania Central Mining Institute, and the Ohio Institute of Mining Engineers, states that where a mine is free from gas, and the roof ordinarily good, it does not require a very extended investigation to prove the advantage and economy of electricity over all other systems of power transmission for your coal mine. The following table, giving the cost of wire and pipe installed, based on the present market price of material and labour, shows very conclusively the superiority and economy of the electric system of transmission as compared with pneumatic:—

Power delivered, in foot-candle	Distance in feet	System of transmission	Total loss in the line	Cost of line installed
100	5000	Compressed air	10 per cent.	\$2350.00
100	5000	Electric, 250 volts	10 per cent.	837.50
100	5000	Electric, 550 volts	10 per cent.	280.00

Guided by the above figures, the inclination would be to decide in favour of the electric 550 volt transmission, and if the vein of coal had an average thickness of not less than 5 feet, the decision would be correct.—*Electrical Review.*

**SOUTH WALES COAL MINING.**—Mr. W. Galloway, of Cardiff, has written, for the Cardiff Exhibition handbook, an excellent sketch of coal mining operations as carried on in the South Wales district. The information is presented in a concise form, and technical terms are, as far as possible, avoided. A reprint of the article extends to about 40 pages.

The directors of the South African Territories (Limited) are taking active steps to explore for gold and other minerals in Great Namaqualand, in the German South-West African Protectorate, at points where valuable indications have been met with.

## THE HYATT-HENOCHSBERG GOLD EXTRACTION PROCESS.

MANY endeavours have been made, with almost an equal number of failures, to invent a process for the dry amalgamation of gold, and those who are interested in this question will find the records of the Patent Office full of more or less valuable and interesting information.

The bulk of them aim at bringing the finely-pulverised auriferous sands in close contact with mercury, although there are others which endeavour to produce only rich concentrates without the use of mercury.

The process under notice is one which aims at amalgamation, and the machine in principle consists of an iron tube of from 3 to 4 inches in diameter, bent into a spiral form of four turns, with suitable connections. In the bottom of each spiral turn some 8 lbs. of mercury is poured, forming a pool, but not closing the pipe. A blower is attached to one end of the tube, near which is a feeding hopper, while the other end is connected to a dust settling chamber. The intention now is to blow the finely crushed and absolutely dry ore through the spiral and over the mercury pools. These latter are, of course, dashed about, and to some extent sprayed by the action of the air current, and consequently the particles of ore are brought into contact with the mercury, which then amalgamates and retains any gold that may be present. The gold which escapes the pool in the first spiral is carried along to the second, third, and fourth, and by the time the ore has run the gauntlet of these four it has parted with the bulk of its gold contents. At the end of the run the mercury is taken out, the amalgam extracted with a wash leather, and then retorted in the usual way.

The only power required is that of a couple of men to turn the blower, while the whole machine can be mounted on a barrow-shaped iron frame with wheels, and trundled about as may be necessary. It is needless to say that there is a very large opening for such a simple and portable machine in the vast auriferous territories where water is scarce, and if it will act as well upon ordinary free gold as it did upon the sand with which it was recently tested in London, its investors and proprietors will have every reason to be satisfied with it.

A test was made with this machine last week at some offices in Union-court, Old Broad-street, E.C. As no free milling gold ore could be obtained, a substitute was employed. This consisted of clean dry sea sand, into which a weighed quantity of coarse and fine pure refined gold was mixed. The test, therefore, though the best under the circumstances did not resemble an actual working one, and we should certainly like to see a ton or two of actual crushed ore from a mine passed through the machine before passing a definite opinion as to its merits. To return to the experiment, 2 ounces of refined gold were weighed in, and mixed with a bucketful of sand, and then blown through the machine. The amalgam was then taken out and retorted roughly, the retorted gold weighing 2.22 ounces. This was then sent to be refined by Messrs. Johnson and Sons, and then weighed 1.91 ounces, which represents 95.5 per cent. of the original bulk weighed in. The test, as far as it went, was highly satisfactory, but we trust that the patentees will afford all those interested in this important question an early opportunity of being present at a trial in bulk of actual crushed free milling ore from a mine, as such an experiment would fairly test the merits of what certainly has all the prospects of being a successful machine.

## DEATH OF SIR JOHN PENDER.

THE death took place on Tuesday, at his residence, Foots Cray, Kent, of Sir John Pender, D.L., J.P., whose connection with the several submarine telegraph companies in London was of a very extensive character. Having acquired considerable wealth as a Glasgow and Manchester merchant, Sir John interested himself in the company which was formed in 1856 to lay a cable between the United States and England. Deceased, who was already Chairman of the British and Irish Magnetic Company, was elected a director of the new venture, which, as is well known, met with many disasters. In consequence many persons lost their faith in the undertaking, but the deceased, together with Mr. C. W. Field, and Professor Johnson, now Lord Kelvin, never faltered in their belief that the idea was possible. At last a Board of Trade committee was appointed to enquire into the matter, and they endorsed the views of the promoters. However, then a sufficient capital could not be obtained, but the difficulty was overcome by Mr. Pender guaranteeing a quarter of a million, on the strength of which the Cable Construction and Maintenance Company was formed. In 1865 another effort was made to lay the cable by the *Great Eastern*, but when 1064 miles from the Valencia Island it broke through an accidental strain. The next attempt, luckily, proved successful. The deceased gentleman then was instrumental in organising and developing the Mediterranean, Eastern (India and China), Australian, South African, and Direct African cables, and by the year 1882 he was able to announce to the world that 66,000 miles of submarine cable were in existence, supported by £25,000,000 of capital. In recognition of his work Sir John was made a K.C.M.G., and subsequently a G.C.M.G., while on April 23, 1888, a grand banquet was given in his honour at the Hotel Metropole. It is stated that the capital of the submarine telegraph companies over which Sir John presided amounted to nearly £15,000,000, and the cable mileage to 73,460 nautical miles. Sir John was Chairman of the Metropolitan Electric Supply Company, which is the largest undertaking of its kind in this country, and in 1895 supplied upwards of 250,000 lights. He was also Chairman of the Eastern, Eastern Extension, South African, Brazilian Submarine, African Direct, West African, Direct United States, Direct Spanish, and Europe and Azores Cable Companies, of the Pacific and European Telegraph Company, of the Globe Telegraph and Trust Company, and a trustee of the Submarine Cables Trust. To mining investors he was more popularly known as the Chairman of the late Panulillo Copper Company, which in 1894 was converted into the Central Chili Copper Company. In 1869, the deceased compiled his "Statistics of the Trade of the United Kingdom with Foreign Countries, from the year 1840." He took a genuine interest in the working classes, and during the cotton famine in Lancashire he opened dining rooms, where food was supplied to the operatives at cost price. He was a Fellow of the Royal Societies of London and Edinburgh, and a Fellow of the Royal Geographical Society, and of many other societies.

**GOLD MINING IN CORNWALL.**—The late Edward Cooze, Esq., Clerk of the Peace for Cornwall, had grains of gold from a stream in St. Stephens, near where there is an immense lode; and it is supposed these grains of gold were washed from the lode. It is possible now this great lode will be shortly mined for blends; if so, a most diligent search will be made for gold.—*Cornish Post.*

The BALAGHAT MYSORE MINES (LIMITED) has sold the gold obtained during the month of May last, which realised £961 14s. 1d.

## REPORTS FROM THE MINES.

### BRITISH MINES.

**DEVON GREAT CONSOLS.**—William Clemo, July 9, 1896. Wheal Anna Maria: In the stope in the bottom of the 110 fathom level east the lode is producing 8 tons per fathom. The stope in the back of the 110 fathom level east is yielding 4 tons of copper ore and 4 tons munda per fathom.—Field Shaft, South Lode: In the stope in the bottom of the 130 fathom level west the lode is worth 8 tons munda per fathom. In No. 2 stope in the bottom of the 130 fathom level west the lode is worth 7 tons of copper and munda ores per fathom.—Wheal Josiah, Richard's Shaft: In the stope in the back of the 130 fathom level east there is a good lode turning out 12 tons munda per fathom.—Hitchin's Shaft: The stope in the bottom of the 115 fathom level west is producing 5 tons munda per fathom.—Agnes' Shaft: The stope in the bottom of the 70 fathom level west is yielding 6 tons copper and munda ores per fathom.—Wheal Emma, Thomas's Shaft: In the stope in the bottom of the 100 fathom level east the lode will produce 10 tons munda per fathom. The stope in the back of the 100 fathom level east is worth 7 tons munda per fathom. In the stope in the bottom of the 100 fathom level east—No. 2—there is a large and productive lode yielding 15 tons munda per fathom. In the stope in the back of the 100 fathom level east, No. 2, the lode is equally large and good. The stope in the back of the 100 fathom level east is turning out 12 tons munda per fathom.—Inclined Shaft: The stope in the back of the 162 fathom level east is producing 3 tons copper ore and 3 tons munda per fathom. The stope in the back of the 162 fathom level east No. 2 is yielding 4 tons copper ore and 3 tons munda per fathom. The stope in the back of the 100 west is producing 5 tons munda per fathom.—New Shaft, New South Lode: The stope in the back of the 130 fathom level east is yielding 9 tons munda per fathom. The stope No. 2 in the back of this level is producing 5 tons munda per fathom.—Watson's Engine Shaft: In the 172 fathom level driving east the lode is 4 feet wide, yielding 4 tons copper and munda ores per fathom. In the 148 fathom level east the lode is 3 feet wide, composed of canic quartz and a little munda. The stope in the back of the 172 east is producing 5 tons copper and munda ores per fathom. The stope in the back of the 160 east is also producing 5 tons copper and munda ores per fathom. In the stope in the bottom of the 148 fathom level west the lode is yielding 7 tons copper and munda ores per fathom. The stope in the back of the 148 east is producing 5 tons copper and munda ores per fathom. During the past month the surface-water has fallen far short of our requirements for pumping, hauling, and other purposes throughout the mines and at the arsenic works; the weather has, however, changed, and a good quantity of rain has fallen, and from present indications we are hoping it will continue.

**LEADHILLS.**—W. H. Paul, July 6: Brown's vein. During the past few days we have had some showers of rain, but not sufficient to increase the water in our reservoir, and our pumping wheels are only moving but very slowly. Water in mine now risen to back of 145 fathom level, and as Brown vein in the 100 fathom level west is letting out a heavy stream of water we have suspended the drainage of that level for a time, and are putting in a dam there to keep back that water until we have a better supply for pumping and larger pitwork fixed in Wilson's shaft. A little rain is falling to-day, and I hope we may soon have a good fall to give us a full supply of water. There is no change of moment in any of the underground bargains since my report of last week. The three crosscuts have been started in accordance with instructions received. Smelting of slags has been completed, and we have now two hearths going on ore.

**WEARDALE LEAD.**—Report on Wardale Company's mines for the week ending July 4: Groverake, Sinking sump from 50 fathoms level, sparve vein with a little ore in it but not to value. Groverake tribute ore for the week returned at 14 blngs.—Biltsburn, Stopes in north flats from Watt's level 35, 40, 28 and 20 dwts. per fathom. Stope below level worth 25 dwts. per fathom. Stopes in south flats from Watt's level worth 10, 13, 25, 25, 25, 20, 18, 14 and 10 dwts. per fathom. Vein stope worth 24 dwts. per fathom.—Greenlaw, Races drift, vein still nipped and poor, worth 10 dwts. per fathom. Stopes worth 16 and 14 dwts. per fathom. Slaty Hazel drift east, we have a strong vein, the two parts having come together, and worth 14 dwts. per fathom. Low's drift, vein chiefly spar, mixed with a little ore, and worth 8 dwts. per fathom. Stopes worth 12, 12 and 14 dwts. per fathom.—Scidling, Driving 44 level east, strong vein composed of sider spar and a little ore, and worth 8 dwts. per fathom. Stope above 64 level east worth 12 dwts. per fathom. Stopes above 56 level worth 8, 12, 14, 15, 10 and 10 dwts. per fathom. Ore raised for the week 23 tons, ore dressed for the week 40 tons, ore and slag smelted for the week 38 tons, producing 22 tons of pig lead.

### COLONIAL, INDIAN, AND FOREIGN MINES.

**LAKE VIEW SOUTH.**—Manager's report for fortnight ending May 29: Main shaft sunk to total of 175 feet. Ground keeps the same, but is somewhat closer and more defined, thereby keeping the water back, the flow not being quite so strong this fortnight: 15 feet of timbering have also been put in.—Level main drive, 100 feet in this level taken out, timbered, lathed, and mullocked ready for stopping. Catchpits are being prepared, and everything got ready for the arrival of pump.—(Signed) Wm. Oats.

**NORTH BOULDER.**—The following information has been received from the mine manager, Mr. Henry Lyon, in a letter dated July 7:—"We are going to a delay in the mail service only reached London July 6. The western boundary shaft continues to give splendid gold, and the lode is wide, the thickness not yet ascertained, as I do not care to break out such good stone and bring it to the surface until we are ready to crush. I am driving along the hanging wall, and have not yet got to the footwall. The work is being rapidly pushed forward. We have a large quantity of good milling ore at bank, and more can be broken out as fast as required."

**OUTHO PRETO.**—Passagem Mine report for May: 470 and north east was driven 2.50 metres. It is at present in a bar of schist against the hanging wall but the lode holds forward below. End under 435 from No. 2 shaft was driven 3.20 metres, full size in strong quartz lode. 435 and north east was driven 1.70 metres, and continues full size in quartz, carrying strings of pyrites. Crosscut at 435 between shafts was driven 2.40 metres, and holed to stope in quartz 4 metres thick, and will afford great facilities for further stopping. No. 1 winze at 435 was sunk 1.70 metres, full size in quartz. No. 2 winze at 435 was sunk 3.50 metres on the incline. It carries a branch of schist against the roof, but without quartz lode below. 435 and south west was driven 2.10 metres, without ore. 400 and north east was driven 3.20 metres. It carries about 1.30 metres of quartz, with good patches of pyrites against the roof, but quartzite continues below. 400 and south-west was driven 4 metres in quartzite, carrying only occasional small lines of quartzite. 385 and north-east was driven 4.00 metres in hard quartzite, and the lode has bent around almost at right angles to its usual course. Rise from 355 south-west was driven 3.30 metres. It carries about 1 metre thickness of ore, and appears to be getting into the ore about at 215 south-west. End between shafts over 315 was driven 4.30 metres. A small branch of ore has appeared against the roof, but end is mostly in schist. Rise over 315 north-east was advanced 3.70 metres in schist without ore. 315 and south-west was driven 4 metres. It carries a little ore against the roof, but is mostly in mixed quartzite and schist. 315 and north-east was driven 4.20 metres. The end got into quartzite, but quartz has again risen from the bottom, and now stands about half the height of the breast.—Deep adit. Driving has been commenced from the river at a point just below the level of the 315 metres level. An advance of 9 metres was made with six men in schist, carrying strings and branches of quartz, though nothing to value.—Stope. At the 470 level the stope on tinne to open up well, the ore being over 4 metres thick and of good average yield. At the 435 level the stope in the main stope has been much less than usual as the ground requires filling and securing. When this is done there is still a good quantity of ore to be removed under the 450 level, where the quartz is standing 6 metres thick. Two side stopes from rise 31 over the 435 level have been opened up by communications from below, and are yielding a good quantity of ore, the lode being nearly 5 metres thick. Under the 435 level from No. 1 shaft the lode has become small and poor, and the end must be advanced further before more profitable stopes can be opened up. At the 400 north-east five stopes are being worked. In the three outer stopes the lode carries about 3 metres of ore, but in the two inner stopes the ore is over 4 metres thick and of fair average yield. Over the 400 south west the stopes near rise 28 are being carried across the 365 level, on ore 3 metres thick, which is holding up under the quartzite standing in the level. The new stope at foot of rise 28 still carries a large amount of quartzite, but the quartz is now 2 metres thick and appears to be increasing in size. At the 315 south west the inner stope carries a great deal of schist, but good bunches of ore occur, though the value of the latter is much diminished by the unavoidable admixture of broken schist. In the outer stope work has been confined to stopping the roof, where a small branch of quartz has opened up to nearly 3 metres in thickness. Near No. 1 shaft at 315 south-west a pillar has been stopped, but not much ore can be broken from it. Another stope below this is wholly in quartzite. At the 315 north-east in the stope in the lode the ore is found to extend out under the level nearly 5 metres thick and of very good value. Under the 285 south-west the quartz is becoming small, the lode being composed in great part of quartzite. At the 235 south west the lode in upper part of stope has become pinched, but in the lower part a good regular body of ore 4 metres thick is holding forward. At the 215 north-east the outer stope continues in strong quartz lode 6 metres thick, but of rather low grade. The middle stope is chiefly in quartzite, with irregular bunches of ore. The new stope near end is opening up well, the quartz being 3.50 metres thick over a length of 20 metres.

Reports from the Mines continued on Page 894.

—The directors of the SAN SEBASTIAN NITRATE COMPANY (LIMITED) have declared an interim dividend, on account of profits for the current year, of 2s. a share (less tax), payable on 16th inst.



## TELLURIDE, COLORADO.

By T. F. VAN WAGENEN, E.M.

IN point of gold production this camp stood fourth among the Colorado mining districts in 1895, having been surpassed only by Cripple Creek, Central, and Leadville. It is not unlikely to take third place by the end of the current year, as all the old mines are doing exceptionally well, and there are a crop of new ones coming to the front with remarkable rapidity. Its location—in the heart of the rugged San Juan Mountains, and in the extreme south-western corner of the State—has rendered its development rather slow, and even to-day there is an entire absence of the mining boom, and no unusual excitement among its citizens, in spite of the rapid strides the mines are making.

The San Juan Mountains are an exceedingly rugged group of hills, roughly circular in outline, and with an average diameter of about 40 miles from base to base. The Continental Divide passes through them, but on all sides the elevations fall away, so that from any direction from a point of view 50 to 75 miles distant, the great uplift stands alone. It contains over 40 peaks exceeding 13,000 feet in altitude, and a round dozen that are over 14,000 feet. Of course, such a group of mountains collects a vast amount of snow, and this in time becomes the origin of numerous streams. The mass may be fitly likened to a wheel without its rim, resting horizontally on its hub, the spokes being the great rocky shoulders of the central upheaval and the spaces between the spokes—the principal rivers running from its slopes. Thus, to the eastward flows the Rio Grande, which finally, after 1500 miles of wandering, finds its way into the Gulf of Mexico. To the south flows the Los Pinos and the Animas, to the south-west the La Plata, to the west the Dolores and San Miguel, to the north-west the Uncompahgre, and to the north the Lake Fork. All the latter find their way through the Colorado River into the Gulf of California.

Each one of these streams emerges from the mountains through a deep canyon, and heads in tremendous amphitheatres at the hub of the huge uplift. These amphitheatres are locally called "basins." In each principal stream, and generally located in a little park midway between the canyon and the "basins," is a mining town of considerable size, 1000 to 2000 population, while still further up, and often in the basins themselves, are smaller settlements in the close vicinity of the mines, where the Government has often established post offices for the convenience of the miner, and where a few general stores and several saloons continue to drain the same individual of his monthly wages. Thus, near the head of the Animas is Silverton, at an altitude of 9200 feet above sea level, and between it and the crests of the rugged divides on all sides are Eureka 10,000 feet, Gladstone 10,800 feet, and Mineral Point 11,474 feet. In the Dolores is Rico, whose altitude is 9020 feet. In the San Miguel is this little city at an elevation of 8800 feet, while above it lie Pandora 9300 feet, Ophir 9700 feet, San Bernardo 9750 feet, Wilson 10,200 feet, and Smuggler 11,000 feet. In the Uncompahgre is Ouray resting in a beautiful little park at an altitude of 7700 feet, and in the gulches above it are Sneffels 10,600 feet, Ironton 10,950 feet, and Guston 11,125 feet. In the Lake Fork is Lake City 8770 feet, and following up the stream to its several heads one finds in turn Capital 9480 feet, Sherman 9746 feet, and White Cross 10,500 feet.

Finally, some little distance below the source of the Rio Grande is the wonderful little City of Creede, having an elevation of 8600 feet, while higher up in the same valley are the camps called San Juan 8900 feet, Lost Wail 9534 feet, and Carson 11,000 feet.

In spite of the rugged nature of the country the railroad system of the State has been pushed to all of these six principal towns, and in these a population of about 7500 is gathered, consisting chiefly of merchants, mine managers, the families of the miners, and the usual proportion of sporting and gambling people. And to five of the smaller camps the railroad people have managed to crowd their road bed, so that the whistle of the steam engine is heard in the very heart of the great mountain mass. In the 20 odd minor settlements above the principal towns are congregated a total population of about 5000, consisting almost wholly of miners and mill operatives. Thus the total population of the San Juan Mountains may be roughly placed at 15,000, which figure will be large enough to cover the ranch stock and lumber men who have located themselves at advantageous points in the foot hills. The present annual production of precious metals of the entire region amounts in value to about \$6,000,000, about equally divided between gold and silver. To this figure should be added about \$500,000 to cover the value of lead and copper associated with the nobler elements, and for which the miner gets liberally paid. The prospector first entered this range of mountains in 1873. Since that date its development has been very steady. Since 1880 the annual output has averaged \$4,000,000, so that up to the close of 1895 this part of Colorado had furnished about \$70,000,000 worth of the money metals, and it is evident that during the next 10 years it will yield as much as in the past 20. Until 1893 about two-thirds, or even a larger proportion, of the output was silver, so that the region was locally known as the Silver San Juan. But since that year, which closed up many of the best silver mines, and curtailed the value of the output of all, the miner, with wonderful energy and pluck, has so searched the vast hills for the yellow metal that the total value of the output has never fallen off, and is now (since the beginning of 1896) on the steady increase, while the proportion of gold to the entire mineral yield is already a little over 50 per cent., and in a couple of years more will reach 75 per cent. if the present rate of growth continues, as is most likely to be the case. Taken altogether, it would be difficult to find a more prosperous group of communities than is congregated at the present time in the deep canyons, the pretty parks, and the high basins of this massive upheaval; and what is, perhaps, more satisfactory, the mines, through 20 years of steady work, are demonstrated to be of permanent and genuine value, worthy of careful exploitation on a large scale, and certain, when opened with judgment, to become dividend payers for an indefinite period.

The formation of the entire district may be accurately described as a mass of eruptives (mainly andesite, diorite, and trachyte) resting on top of cretaceous and carboniferous sandstones, limestones, and shales. These eruptives are part of a vast overflow which covers about 700 square miles of the south-central part of Colorado, and extends down into New Mexico. I am not aware that the vent through which it came to the surface has yet been determined.

For the most part the mineral deposits are in the form of true fissure veins of great length. Many can be traced and have been opened and worked for miles. They bear in almost every direction, crossing each other at all angles, and generally stand nearly vertical. They occur only in the centre or hub of the mountain mass, and, excepting Creede, which lies on an

eastern shoulder of the upheaval, and Rico, which lies a little distance to the south-west outside the border of the eruptives, and in a region of Carboniferous and Silurian rocks, the vein system of the San Juan would all be included within an irregular circle, whose greatest diameter will not exceed 25 miles. Around the edges of this area there have been already discovered several regions of secondary deposits, of which Rico is the most prominent example. Others are the auriferous ore chimneys and chutes in the quartzites below Ouray, and in the limestones at Sawpit camp below Telluride.

The basins at the head of the San Miguel River were first explored in 1878. By 1880 it was recognised that the district was good, and in consequence the town of Telluride was established. It has ever since been a prosperous community. The productive mines at the present time are the Humboldt, Smuggler-Union, Cimarron, and Valley View in Marshall Basin; the Tom-boy, Japan, and Columbia in Savage Basin; the Gold and Silver Chief and Liberty Bell in Comet Basin; the Nellie and Contention in Bear Creek Basin; and the Gold King, Suffolk, Summit and Alta in the basins between Telluride and Ophir.

Besides these, there are a very large number of mines under process of development which have not for one reason or another reached as yet the profit-producing stage. Either good ore has not been found, or the property needs a mill or a tramway to make operations possible, or possibly the owners are developing with the idea of a sale in a few years.

The mines all lie at altitudes ranging from 1500 to 3000 feet and over above the town. As the mountains are exceedingly precipitous, wagon roads are impracticable, and most transportation is effected either by aerial tramways or on the back of the burro and mule. There are six tramways in operation in the camp, and it requires about 400 animals constantly on the trail to do the balance of the work of moving supplies from the town up, and ore from the mines down. As each animal will make about two trips daily, and will carry 150 lbs. up hill, and 250 down, it is easy to figure that about 60 tons of freight consisting of coal, food, and mining supplies, goes daily up, and about 100 tons, consisting of crude or concentrated ore comes daily down, outside of what is transported by the tramways.

The latter are all private concerns, running from the various mines to the mills where the ore is treated. They carry, therefore, principally low grade ore. But these trams are so constructed that they will transport almost anything except heavy machinery. Long mine timbers, rail, and supplies of all kinds are handled with ease and dispatch. It is an interesting sight to watch them in operation, and to observe the variety of material that can be handled. This is pre-eminently the country for such constructions. This will be appreciated when it is stated that from the town of Telluride to the Tom Boy Mine the distance on an air line is about 14,000 feet, while the rise is 3500 feet. Where the mountains (and the gulches leading into them) are so precipitous, wagon roads become very costly, and suffer great damage during the spring thaw, but trails can be maintained. The ores of the district consist mainly of quartz carrying gold and silver in the native state, or associated with galena, pyrites and occasionally zinc blende. In one or two of the mines calaverite is a large part of the gangue. In a few copper exists to a small extent in the form of chalcopyrite.

(To be continued.)

## THE MAORI GOLD MINE.

A circular to the shareholders states that the directors have decided to make up the accounts of the company to 30th June last, and to hold the annual general meeting as soon as possible after the accounts are ready. Some little time must elapse before the accounts are received from the mine, so probably the meeting will not be held until September. The directors, finding it would be impossible to commence crushing before the date for making up the accounts, considered that an independent report on the position of the mine would be appreciated by the shareholders. They consequently arranged with the West Australian Gold Fields (Limited) for their representative, Mr. Backhouse, to make a report. Mr. Backhouse's report will not be received for a week or two, but he has cabled stating that the developments prove stone at a depth of 151 feet, improving in depth. He states that 400 tons raised will, he estimates, run 5 ounces to the ton, and a rich chute of ore assays 18 ounces. He also states that the developments warrant an additional 5 stamp mill. The directors consider this a most satisfactory cable, and are looking forward to Mr. Backhouse's full report. There have been many unavoidable delays in getting the machinery to the mine. A large portion of the machinery has been there, and erected for some time, but the last letter received from the managing director stated that some portions were still undelivered. A cable from the managing director last week stated that he hoped to start crushing this week.

## ANGLO-MEXICAN MINING COMPANY.

The directors have declared an interim dividend of 1s. per share, free of income tax, payable on the 8th inst., at the company's bankers, Messrs. Glyn, Mills, Currie, and Co., 67, Lombard Street, London, to all shareholders on the register at this date.

— We are officially informed that Mr. H. B. Marshall, of Johannesburg, has been elected a member of the board of directors of the RHODESIA (LIMITED).

— The NUNDYBROOK COMPANY (LIMITED) has sold the gold obtained during the month of May last, which realised £13,355 16s. 10d.

— The MYSORE REEFS (KANGUNDY) COMPANY (LIMITED) has sold the gold produced in May for £382 4s.

— The COROMANDEL GOLD MINING COMPANY OF INDIA (LIMITED) has sold the gold produced in May for £2209 4s. 4d.

— The OOREGUM GOLD MINING COMPANY OF INDIA (LIMITED) has sold the gold obtained in May for £22,758 8s. 11d.

— The ANGLO-FRENCH EXPLORATION COMPANY (LIMITED), 170-3, Winchester House, E.C., as London agents of the ANGELO GOLD MINES (LIMITED) and the DRIEFONTEIN CONSOLIDATED MINES (LIMITED), have received intimation that the first ordinary general meetings of these companies will be held at Johannesburg on Thursday, the 6th day of August, 1896, a copy of the report of which will be forwarded to the shareholders in due course.

— The MINER AND BANKING CORPORATION (LIMITED) has declared an interim dividend at the rate of 7½ per cent. per annum for the six months ending June 30, payable on and after July 30.

— Letters of allotment have been posted in connection with the JOKER PROPRIETARY GOLD MINES (LIMITED).

— The SOUTH MOUNT LYELL MINING COMPANY (LIMITED) advise us that Messrs. William Jacks, D.L., G. Imroth, and D. J. Mackay, have been constituted the London Board of the company.

We are informed that Mr. Thomas Radd, being obliged to reside abroad during the winter, has retired from the Chairmanship of the Consolidated Gold Fields of South Africa (Limited), and that Captain E. F. Rhodes has, since his return from South Africa, resigned his seat at the board. Mr. H. E. M. Davies has been appointed Chairman of the company, and Lord Harris, G.C.S.I., has joined the board as deputy-Chairman.

## COMPANIES AND LEGAL ANNOUNCEMENTS.

\* Advertisements are inserted in this column at the rate of 9d. per line, with a minimum charge of 7s. 6d.

IN the HIGH COURT OF JUSTICE, Chancery Division, Mr. Justice Stirling. 1896, N. 086. In the Matter of NIXON'S NAVIGATION COMPANY (Limited and Reduced) and the Companies Acts, 1867 and 1877.

Notice is hereby given, that a PETITION for CONFIRMING a RESOLUTION REDUCING the CAPITAL of the above-named Company from £780,000, divided into 7800 shares of £100 each, with £37 16s. paid up thereon, and £12 4s. uncalled, to £546,000, divided into 7800 shares of £70 each, with £55 16s. paid up thereon, and £4 4s. uncalled, was on the 25th day of June, 1896, presented to Her Majesty's High Court of Justice, and is now pending, and that the List of Creditors of the Company is to be made out as for the 22nd day of July, 1896.

Dated this 3rd day of July, 1896.

H. F. CHURCH, Chief Clerk.  
GADSDEN and TREHERNE, 28, Bedford Row, London, W.C.,  
Solicitors to the Company.

## THE OCEANA COMPANY (LIMITED).

NOTICE IS HEREBY GIVEN, that an EXTRAORDINARY GENERAL MEETING of the Company will be held at Winchester House, London, E.C., on MONDAY, July 13, 1896, at Twelve o'clock noon, for the purpose of considering and, if thought fit, passing the following Resolution, viz.:

"That the draft agreement submitted to this Meeting, and expressed to be made between this Company of the one part, and the Oceana Consolidated Company (Limited), of the other part, for the sale of the assets of this Company to the Oceana Consolidated Company (Limited) be, and the same is hereby, approved; and that the Directors of this Company be, and they are hereby, authorised to enter into an agreement on behalf of this Company in the terms of such draft, and to carry the same into effect, with full powers to assent to any reasonable modifications therein (whether before or after the execution thereof) which they may think expedient in the interests of this Company."

Members whose Shares are represented by Share Warrants, and who desire to take part in the proceedings of the Meeting to be held on July 13, at Winchester House, at Twelve o'clock, must deposit their Share Warrants at the Offices of the Company, 13, Austin Friars, London, on or before the 9th inst., receiving in exchange a receipt, which must be produced by the member at the Meeting. Copies of the circular which has been issued by the Company may be obtained on application at the Company's Offices in London, or 19, Rue Lafayette, Paris.

By Order of the Board.

MORTAN LAMBERT, Secretary.

Offices of the Company:  
13, Austin Friars, London, E.C.  
Dated July 4, 1896.

## THE AUSTRAL-AFRICAN COMPANY (LIMITED).

NOTICE IS HEREBY GIVEN, that an EXTRAORDINARY GENERAL MEETING of the Company will be held at Winchester House, Old Broad Street, E.C., on MONDAY, July 13, 1896, at One o'clock, for the purpose of considering and, if thought fit, passing the following Resolution, viz.:

"That the draft agreement submitted to this Meeting, and expressed to be made between this Company of the one part and the Oceana Consolidated Company (Limited) of the other part, for the sale of the assets of this Company to the Oceana Consolidated Company (Limited) be, and the same is hereby, approved; and that the Directors of this Company be, and they are hereby, authorised to enter into an agreement on behalf of this Company in the terms of such draft, and to carry the same into effect, with full powers to assent to any reasonable modifications therein (whether before or after the execution thereof) which they may think expedient in the interests of this Company."

To enable Holders of Share Warrants to Bearer to vote, they must deposit their Warrants at the Offices of the Company on or before July 9.

By Order of the Board,

DAVID R. WARDROP, Secretary.

Offices of the Company:  
Token House, 14, Coptall Avenue, London, E.C.  
Dated July 4, 1896.

## AFRICANA (LIMITED).

NOTICE IS HEREBY GIVEN, that an EXTRAORDINARY GENERAL MEETING of the Company will be held at Winchester House, Old Broad Street, E.C., on MONDAY, July 13, 1896, at 11.15 o'clock a.m., for the purpose of considering and, if thought fit, passing the following Resolution, viz.:

"That the draft agreement submitted to this Meeting, and expressed to be made between this Company of the one part, and the Oceana Consolidated Company (Limited) of the other part, for the sale of the assets of this Company to the Oceana Consolidated Company (Limited) be, and the same is hereby, approved; and that the Directors of this Company be, and they are hereby, authorised to enter into an agreement on behalf of this Company in the terms of such draft, and to carry the same into effect, with full powers to assent to any reasonable modifications therein (whether before or after the execution thereof) which they may think expedient in the interests of this Company."

By Order of the Board,

ROBT. RANDALL-STEVENS, Secretary.

Offices of the Company:  
34, Clement's Lane, London, E.C.  
Dated July 4, 1896.

## THE ANGLO-AUSTRALIAN EXPLORATION (LIMITED).

THE Directors have, with the sanction of the Company in General Meeting held this day, DECLARED A DIVIDEND for the first financial year of the Company of the sum of 8s. 6d. on each Ordinary Share, on which 10s. per Share has been paid up, making, with the interim dividend of 7s. per Share paid on such Shares on the 4th January, 1896, the sum of 15s. 6d. per Share; also a dividend of 31s. on each Deferred Share, fully paid-up, of £1, making, with the interim dividend of 22s. per Share paid on such Shares on the 4th January, 1896, the sum of 53s. per Share; and also a further dividend payable in fully paid-up Shares of The Gibraltar Consolidated Gold Mines (Limited), so that every holder of Ordinary Shares, with 10s. paid up thereon, shall in respect of each five of such Shares be entitled to three fully paid-up Shares of £1 each in the Gibraltar Consolidated Gold Mines (Limited), and every holder of Deferred Shares, fully paid-up shall, in respect of every four of such Shares be entitled to nine fully paid-up Shares of £1 each in the said Gibraltar Consolidated Gold Mines (Limited), all such dividends to be free of Income Tax.

The Directors have made this dividend payable on the 23rd July instant.

The Transfer Books of the Company will be closed from the 20th to the 23rd July instant, both days inclusive.

By Order of the Board,

W. F. GARLAND, Secretary.

Offices: 6, Queen Street Place, London, E.C.,  
9th July, 1896.



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**GORDON WILSON, Esq.,** The Australian Gold Recovery Com-  
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 literary contributions should be addressed to "THE EDITOR." All matter  
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LONDON: JULY 11, 1896.

### MINING IN NEW SOUTH WALES.

**T**HERE does not seem to be much reason for holding with  
 the colonists themselves that there is any disposition abroad  
 in England to permanently lose sight of the admirable pro-  
 ductive capacity of New South Wales as a gold mining country.  
 Undoubtedly, the sudden and almost magician-like rise into  
 prominence of the West Australian gold field has done some-  
 thing to divert attention from the older provinces, but  
 this, it may safely be premised, is only a temporary matter;  
 the solid and substantial claims of New South Wales to the  
 tender care of the capitalist and financier not being likely to  
 suffer permanent eclipse. In industry, as in other matters, the  
 public are apt to go after some new thing, and when the novel  
 departure has as much to recommend it as enterprise in West  
 Australia, there is hardly ground for surprise that it should be  
 taken up with energy and enthusiasm. Some day, no doubt, the  
 glamour and novelty having worn off, the development of West  
 Australia, relieved from the heavy weight of superin-  
 cubant company manipulation, will settle down into  
 steady grooves. Before, however, the operations in these  
 new fields become in the highest degree profitable, it  
 is obvious that the seductive and disturbing influ-  
 ences inseparable from what may be called boom-tide  
 should give place to a colder and more business-like  
 attitude of mind. So far as can at present be seen, there is  
 little ground for supposing that when this comes—as come it

assuredly will—the durable reputation and substantial results  
 achieved by New South Wales will remain altogether in the  
 shade. A gold field whose capabilities have stood the test  
 of years has some points of distinct advantage over countries  
 of a later date and more recent rise into fame. Its claim  
 upon popular favour is attested in the most convincing  
 manner possible by the testimony of actual figured  
 results—and to some extent stands upon a higher  
 plane than a reputation supported merely by geological  
 theorisation and the voices of experts. Not that a new country  
 auriferous to a degree like West Australia does not frequently  
 follow up its preliminary flourish of directorial and company-  
 promoting trumpets by heavy outputs and massive crushings,  
 but a good deal of time must at the outset necessarily  
 be spent upon exploration, plant, and the thousand  
 and one details which have to be adjusted to put  
 the company machinery into smooth working order, during  
 all of which time the public are waiting for actual results.  
 New South Wales has 40 years of effective work, and cor-  
 responding outputs, to point to as an indication of her merits,  
 and the fact that during recent years the output has steadily  
 increased, shows that there is little, if any, disposition  
 at home to forget the mineralogical history of the  
 Australasian Continent during the past four decades.  
 A sort of general notion may possibly have prevailed  
 in ill-informed quarters to the effect that the colony was  
 played out, but there was no necessity on the part of the colo-  
 nists themselves to elaborately contradict the statement, for  
 there has never been any legitimate cause for fearing that so  
 pessimistic and unwarrantable a view would ever meet with  
 anything like general acceptance. Some of the alluvial deposits  
 may be fairly well exhausted, but a belief that the same dictum  
 could be applied to the whole colony is certainly not likely  
 to be entertained by any whose opinions would affect the  
 course of industry. In the future working of this colony  
 the new and improved processes which have been  
 recently originated will doubtless exert a very beneficial  
 effect upon the results of the workings, and enable deposits to  
 be systematically opened up, which in the old days might not  
 have been found to be worth the candle. That a steady and  
 continuous improvement will probably take place in the mining  
 achievements of the colony is suggested by the last year's  
 figures, which show that in the production of gold a substantial  
 increase was registered. There was, indeed, a small decrease  
 registered on the aggregate of mining production, but this was  
 in cases due as much to a fall in the marketable value of the  
 minerals as to any other cause. Thus we find that for 1895  
 coal shows a decrease of £30,426 in value, notwithstanding an  
 increase in quantity of 68,500 tons, the falling off being due  
 to the low price prevailing. For gold, however, the figures  
 are much more satisfactory, an advance of some 40,000  
 ounces upon the previous year being recorded. The  
 Government calculations show that for 1895 the yield  
 was 380,165 ounces, valued at £1,315,929, an increase of  
 £159,211 over 1894. These gratifying results are, in a measure, due  
 to a scheme for providing work for the unemployed, in accordance  
 with which a large number of men were sent into the gold fields  
 as fossickers, the output showing from this date an immediate  
 tendency to expansion. There is every reason, it is believed, to  
 hope that this increase will be maintained, and that a scheme,  
 which was in the first instance elaborated for the purpose of  
 alleviating the distress among the labouring classes,  
 will be also productive of highly beneficial results to  
 the industry at large. The compass of the Govern-  
 mental report includes a good deal of highly interesting and  
 useful matter of a general kind, which will repay careful and  
 detailed examination. The average production per ton in gold  
 for the several districts ranges from 4 ounces 15 dwts. 17 grains  
 in Bathurst, to 10 dwts. 21 grains at Southern, but is, on the  
 whole, much nearer to the former figure than to the latter.  
 Another paragraph tells us that the total production in gold  
 since the opening up of the New South Wales gold field down  
 to the end of 1895 has reached an aggregate of 11,394,562  
 ounces, valued at £42,326,588—surely a record of which the  
 leaders of the industry in any part of the world would have  
 every reason to be proud. It would be contrary to all experience  
 to suppose that there will be any permanent backsliding in the  
 future. The advance in mining science continually moves in the  
 direction of increasing the outputs of well-trieved mining fields by  
 more economical, because more effective, methods of treatment.  
 There is no ground for supposing that New South Wales will  
 offer any exception to this rule. All the evidence available,  
 indeed, points in the other direction. On the whole, then, the  
 most recent statistics reflect favourably enough on the present  
 course and future prospects of mining in New South Wales,  
 and there being certainly no disposition on the part of the  
 leaders of the industry in the colony to neglect any chance of  
 furthering its interests, it may safely be taken that a period of  
 greater or less prosperity awaits them.

### WEST AUSTRALIAN GOLD FIELDS.

**T**HE wonderful success achieved by the West Australian Gold  
 Fields (Limited), which may be regarded as the pioneer  
 company of that colony which has attracted such a vast deal  
 of attention and favour, should put the fortunate original share-  
 holders in a happy frame of mind. The second annual report  
 of the company was issued during the week, and it is impossible  
 to conceive of its giving rise to the least feeling of dissatisfac-  
 tion. On the contrary, the shareholders ought to feel not only  
 immensely satisfied, but grateful, for it records not alone past  
 successes of a remarkable character, but promises even more  
 brilliant results in the future. There is, however, one feature  
 in the report which may give rise to some little murmuring, and  
 that is the fact that although a very large profit has been earned,  
 only a small portion of it has been distributed in the way of  
 dividend. The net profit amounted to the huge sum of  
 £231,849, which, on a capital of £100,000, is over 280 per cent.



It is surprising, therefore, to learn that the directors only recommend a dividend of 30 per cent., which, with the interim dividend, makes 50 per cent. for the year. Though we think the policy of the directors in largely increasing the reserve is a wise one, nevertheless we shall be astonished if they do not meet with some opposition at the forthcoming meeting. Considering the vast scope of the company's operations the capital cannot be regarded as a large one, and, therefore, it is prudent to keep in hand a large balance for any emergencies, and the majority of the shareholders must at once arrive at the same way of thinking. The directors explain their policy in the following forcible words:—"Bearing in mind that the capital of the company is only £100,000, and having learnt by experience that the only way to secure good bargains is to retain a large amount of cash capital always in hand, and having regard to the fluctuations to which the Mining Market is subject, and the inability during certain periods to raise capital for any mining enterprises, however promising, the directors think it advisable to further increase the reserve fund to such an extent that the company's position will be unassailable." Accordingly, the reserve fund has been increased by £100,000, bringing it up to £150,000, whilst £20,000 has been appropriated to a special reserve to wipe off the sum paid for the Hampton Plains Concession, and £25,000 has been added to the fund for the equalisation of dividends, making it £50,000. After all these payments there remains a balance of close upon £27,000 to carry forward, itself sufficient to pay a good dividend. In accordance with the precedent adopted last year, the assets have been valued on a conservative basis. In the balance-sheet they stand at £237,560, but the value tested by the sum realised for the shares since sold, added to the market value of the remainder on July 1, amounts to £453,156. It will thus be seen that in these assets the company have another material source of strength, and large profits should be earned from them in the immediate future. The directors give the following list of properties in which the company is interested, and the mere mention of their titles is sufficient to indicate their individual promise:—Coolgardie district. Hampton Plains Estate (Limited), development proceeding—sales effected. Hampton Plains Estate, Block 45 (Limited), developments proceeding. Hampton Plains Estate, Block 50 (Limited), machinery erected. Coolgardie Waterworks (Limited), pipes being laid.—Menzies district. Menzies Gold Reefs Proprietary (Limited), crushed 445 tons for 989 ounces. Menzies Crusoe Gold Claims (Limited), crushed 450 tons for 1519 ounces. Menzies Waterworks (Limited), pumps working, pipes laid. Florence Gold Mines (Limited), machinery erected. Yerilla Claims (Limited), machinery shipped.—Mount Margaret district. Mount Margaret Reward Claim (Limited), machinery being erected. Quartz Hill Reward Claim (Limited), machinery being erected. Princess Alix Gold Mines (Limited), machinery shipped.—White Feather district. White Feather Reward Claim (Limited), crushed 1840 tons for 3976 ounces. North White Feather Consolidated (Limited), developments proceeding.—Hannan's district. Hannan's Proprietary Development (Limited), developments proceeding—sales effected. Mount Jackson district. Mount Jackson Gold Mines (Limited), crushing commenced.—Murchison district. Cue I. Gold Mines (Limited), crushing commenced.—Dundas district. Mawson's Reward Claim (Limited), machinery being erected. Norseman Proprietary, machinery ordered.—Landed Estates (various districts). Town Properties of West Australia (Limited), Melville Water Park Estate (Limited), Northern Territories. The directors add that all these properties, without exception, are developing satisfactorily. In the case of those which have already begun crushing the results have quite fulfilled expectations as to the average return of gold; several are now about commencing to crush, and the reports are such as to lead to the belief that they also will fulfil expectations, whilst machinery is in course of erection or has been ordered for most of the remaining claims, the reports justifying such a course. Thus everything goes far to justify our forecast that this company has a brilliant future awaiting it. The colony itself is bound to make great progress, and in that progress the West Australian Gold Fields (Limited) will take a great share, and reap corresponding benefits.

## THE HOME MINING INDUSTRY AND THE RAILWAY CARRIERS.

THE mining interest of this country, dealing with fuels—an industry in which the capital invested is to be counted by many millions sterling—is not a business which should be needlessly and ruthlessly disturbed by any passing whim. The readers of *The Mining Journal* will, however, be aware that just now the native British fuel mining business is passing through very troubled waters—troubles, too, that are by no means of its own making. In the interests of the investing and capitalist community at large, much of whose money is sunk in mining ventures on our own soil outside the auriferous catalogue proper, no less than in mining ventures abroad, it behoves this *Journal* this week to express its sympathy with the native fuel industry in the dispute which has arisen with the railway carriers. Although less concerned with home than foreign mines, *The Mining Journal* has been at the pains to try and gauge the merits of the existing trouble on the weight's question, and we must confess that we think the coalowners are being hardly dealt with. It is known to us that large numbers of our subscribers have considerable capital lying at stake in the native mineral deposits affected by the current trouble, no less than in tin, copper, gold, and other auriferous claims scattered the world over, and on this account it is that we do not consider the existing difficulty in the house coal mining centres beyond the province of this paper. Why the railway companies of the first commercial nation in the world seem to manifest

what cannot but be regarded as a large amount of indifference to the prosperity of the trades they seek to serve has for many years been a puzzle to many people. The carriers appear to lose no opportunity of making matters worse instead of better for the suffering inland trades. Neither the more favourable situation of the mining and commercial interests of the country placed near the seaboard, nor the undeniable existence and extension of competition with British mines from the great mining properties of France, Belgium, Germany, and other parts of the Continent—and we had almost added America to the list—seem to move the managers of the iron roads which cover the country. Of course, the railways have their reply—what monopoly was ever lacking for excuses?—still we must confess to a large share of one-ness with that part of the invested capital of Great Britain which favours home manufacturing and mining schemes, whether of a private or Stock Exchange nature, in the complaints which it utters regarding the railway managers' policy. The present dispute occurs to us to have been correctly ear-marked where it has been described as an attempt to sacrifice the coal owners of West and South Yorkshire, Derbyshire, Leicestershire, Nottingham, and Staffordshire to the coal merchants. Rightly enough, the colliery owners do not quite see why they should be called upon to make a sacrifice in order to settle the differences which have arisen between the carriers and the merchants. Merchants, now that the railway companies have expressed their willingness to carry the extra weight, look to the collieries to load it, but the coal masters, who are already in many cases taking well-nigh profitless rates for their minerals, refuse to give the additional quantity. When our readers are reminded that the coal raised in this country totals annually nearly 200,000,000 tons, and that it has just been estimated that this output could, if a demand arose, be immediately increased to 225,000,000 tons, and that one of the trunk lines of the country—the Midland—last year themselves carried no fewer than 18,000,000 tons, they will quickly realise the importance of the struggle now going on. Further, it is urged that already the cost of carriage from some of the inland coal fields is in excess by fully 200 per cent. of the freight which has to be borne by those mineral properties to whom, in consequence of their situation, conveyance by sea is possible.

## NOVA SCOTIA.

THE gold mining industry in Nova Scotia is just now in a very much healthier condition than it has been for a very long time. During the last few years the industry has suffered through a few unprincipled people, who some years ago sold worthless properties to the public for large sums, and thus the confidence of the investing public was for a time lost, and it was impossible to obtain either English or American capital for the development of the mines, while even local people were shy of investing in them. Thanks to the success of a few private individuals, confidence is being gradually restored, and to-day there are several properties which are paying their shareholders upwards of 50 per cent. on their capital, while some few are paying hundreds per cent. Amongst these we might particularly mention the North Brookfield Mine, in Queen's County, and the New Egerton at 15-Mile Stream, in Halifax County; the former has during the last six months produced on an average 430.3 ounces of gold per month, while \$1000 per month would probably be an outside estimate of their working expenses. The latter has produced on an average 350 ounces of gold per month during the last six months, with 40 men only on an average employed; the Richardson Mine in Isaac's Harbour, Guysborough County, which is working on 3 dwt. ore; the Golden Lode in Uniacke, Hants County, and the Modstock at Forest Hill, in Guysborough County, are all paying very handsome returns, probably none of them less than 50 per cent., while we know that the Golden lode has been paying 60 per cent. for the last 15 months. This probably shows as inviting a field for capital as any other country in the world. Until recently Nova Scotian gold ore has been looked upon as a free milling ore. No attempts have been made to save the gold in the tailings; in fact, few people thought it worth while to get them tested. Recently there has been a great change in this respect; tests have been made, which show that in the past large quantities of gold have been lost in the tailings. Assays showing from 4 dwts. up to 2 ounces per ton have been made of old tailing dumps. The North Brookfield are loading off by erecting a chlorination works, and it is rumoured that a large Custom chlorination mill will be erected in the eastern part of the province. This will give a fresh impetus to the industry, and reopen several old mines, which through bad milling practice have been unable in the past to be worked at a profit. The cost of mining and milling gold ores in Nova Scotia ranges from \$1.65. At the Richardson upwards, an average of the mines under competent management will show a working cost of about \$4 per ton. The western part of this province has in the past really only been scratched, but the success of the North Brookfield Mine has started a good deal of prospecting in that district.

## AN IMPORTANT AMALGAMATION.

SINCE our last issue a circular has been posted to the shareholders of the Oceana Company (Limited), accompanied by the notification of an extraordinary general meeting, to be held on Monday next, for the purpose of considering a scheme to consolidate the interests of the Oceana, Africana, and Austral-African Companies. That this scheme will receive—or that it ought, at all events, to receive—the unanimous sanction of the shareholders is a matter of little doubt, for there is no gain-saying that great benefits are likely to result from it to all the companies concerned. The authorised capital of the Oceana Company is £500,000, of which £430,000 has been issued and fully paid. Under the amalgamation the new undertaking will

have a capital of £1,267,500, and it will be called the Consolidated Oceana Company (Limited). This capital the directors propose to be distributed as follows:—To the Oceana Company, £430,000; to the Africana, £537,500; and to the Austral-African, £300,000. Of the three companies, the Oceana is probably the best known, and its career and field of operations are familiar to nearly every investor. The Africana Company is not greatly dissimilar in its special business, its essential difference being that it is more of a finance company. Its capital is £1,500,000, of which £1,075,000 has been issued and fully paid. Its principal assets consist of interests in the Aurora West United, the New Era Company, the Western Kleinfontein, the Van Ryn Estates, the Van Ryn West, the Van Ryn North, the French Western Nigel, the Transvaal Nigel Company, the Douglas Colliery, and the Rand Central Ore Reduction Company, together with part of an option over 12 farms in the Nigel district. The Austral-African is also a finance company, with an issued capital of £300,000. In December last it paid a dividend of 15 per cent. Of the new capital of the amalgamated company, the sum of £500,000 or thereabouts, will be represented in cash and liquid assets, including bonds, railway stocks, &c., brought in by the three companies. In addition, they possess various marketable securities which greatly enhance the available resources. The balance of the capital will be represented by the valuable combined assets, comprising, with their numerous subsidiary undertakings on the one hand, land and territorial interests in going mining businesses on the Rand, and a general South African financial business likely to be of a profitable nature. According to the market prices of the shares, the Austral-African is the only company which seems to gain an advantage, and as the directors offer no explanation of this, one will no doubt be asked for at the forthcoming meeting. But a market valuation, which is dependent upon so many circumstances and conditions, is no absolute criterion for the valuation of a property, and the intrinsic value of the shares of the Austral-African may be undervalued. At any rate, in this connection, the 15 per cent. dividend should be taken fully into account, together with the promising prospects of the company. After all, there is little, if any fault, to be found with the basis of amalgamation. The matter has undoubtedly been thoroughly thrashed out, and it is hardly possible that the directors of the concern should allow the others to take advantage of it. The arrangement appears to be as equitable as it promises to be advantageous, and we think the shareholders will also hold the same opinion.

## GOLD MINING IN NEW GUINEA.

NEW GUINEA is a gold field which is not unlikely in the future to attract much more attention than it has in the past notwithstanding the formidable obstacles which oppose successful gold mining there. But the gold-seeker, we know, is only deterred by the hugest difficulties, and so fascinating to him is the pursuit of the precious metal that death itself hardly becomes a terror. There have been many expeditions into this country, but the dangers they have encountered have far outweighed their gains, and success, therefore, has rarely rewarded the efforts of these enterprising gentlemen. Although, for a time, these failures would have a depressing effect upon others, it soon wore off, and in a wonderfully short time the dangers would be pooh-poohed, and another expedition would start, only to return disappointed and disheartened. But these various attempts were not attended solely with failure. They made the way easier for succeeding adventurers, until, at last, some small, yet promising, measure of success has resulted. Some time ago a party of Queensland prospectors reported that they had discovered payable gold on the Membaré River, but at the time it was not generally credited. But now it has been confirmed by the arrival in Sydney of a member of the party, who asserts that in the head-waters of the river the precious metal was discovered in large quantities. It is alluvial, and extends over a considerable area. As a result of four months' operations, 48 ounces of gold were obtained, but of this 23 ounces were won in the last week. Only in the last week was proper work put in, the rest of the time being spent in investigating the country, and in making preparations. The find was made considerably within the British line, and it is likely to be further explored by some members of the original party, who think that the field, even under present circumstances, is good enough to work. Our contemporary, the *Australian Mining Standard*, states that the attention of prospectors has been turned to the neighbouring islands, as well as to New Guinea. A recent arrival from Woodlark emphatically declares that the field is "played out," so far as alluvial is concerned, and this applies with equal force to St. Aignau's and Sudest. But even if the alluvial is "played out," the passion for mining is not. A few weeks ago a party of experienced men left Sydney for the last-named locality, equipped with the machinery requisite for reefing, and the best of hopes are entertained as to the results of the speculation. Nor does late news from Woodlark altogether accord with the above opinion, for news arrives by steamer that the miners generally are doing well, rich patches of gold having been struck in some cases. A strange fact is that gold has been found under the coral which covers the greater portion of the island. If this statement be correct the boring operations about to be conducted at Fanufuti by Professor COLLAS may disclose unexpected sources of mineral wealth in the coral ground. And the day may not be far distant when there will be a rush eastwards, and the Australian diggers will desert the hardships of the colony for the lotus-eating luxury of life in the Pacific.

## SIMMERING SOUTH AFRICA.

NOTWITHSTANDING that the South African market still continues in an unwonted state of inactivity, affairs have lately very much quietened down in the Transvaal. The alarming



situation which politicians of even the more sober sort were compelled to recognise, and which threatened on more than one occasion to lead to war, has given place to a quieter period, and little result remains for the moment but a heightened feeling on both sides. This accession of temporary calm must not, however, blind us to the fact that the problem of race in South Africa is still unsettled, and that it will work its way towards the conclusion, no matter what accidental and contingent circumstances might intervene. Still, the present time of comparative rest may lead to some excellent results in the way of recouping the mining industry for the loss and retardation which must have been suffered owing to the recent disturbances. The suspension, or modification, of the labour difficulty cannot but have tended to the same end, so that it will be surprising if in the immediate future considerable progress is not registered in South African mining. It seems to be expected on all hands that towards the autumn months a boom—or at least a revival—will set in among Kaffirs. The realisation of such a prediction would certainly come as a great relief to those who are interested in the, at present, depressed markets, and the lessening of the stagnation which has fallen upon affairs in the City will be welcomed by all. It was particularly unfortunate that at a time when all eyes were turned towards the newly discovered West Australian gold field, the older and more thoroughly tried industrial area should have been made the arena for embittered political controversy, and even in a measure of actual military operations. From the point of view of the South African financier, a more unfortunate combination of circumstances could hardly have been experienced. It will thus be all the more satisfactory on all hands to learn that for the time being the simmering unrest of the Transvaal has given place to a state of relative calm, and while the rumours of Boer armament must be carefully taken into account, so that in the future the Englishry may not be taken by surprise, there should be every disposition manifested, both at home and in the colonies, to hail the dawn of another period of prosperity, which, if the pendulum-like law of compensation has any application to industrial affairs, should now be awakened on the Rand.

### TRADE PROSPECTS.

THE Board of Trade Returns for June, and for the half-year, should give unbounded satisfaction to all who peruse them, and should not only go far to remove any depression that may exist that our trade is languishing, but should restore confidence in its future expansion. The statistics are, indeed, most cheerful reading, for improvements—and these of a most promising character—are shown all along the line. Dealing, first of all, with the month, substantial increases are shown in both the imports and exports—of £1,334,671, or nearly 4 per cent. in the former, and of £2,729,000, or 15.3 per cent. in the latter. For the half-year the imports showed an advance of £12,793,335, equal to 6.02 per cent., whilst the exports improved by £12,885,206, or a little over 12 per cent. upon the first half of 1895. These figures are distinctly encouraging, even when it is borne in mind that owing to leap year an extra day has to be taken into account, and that the first half of last year was an exceptionally bad period. The improvement in the imports is not so advanced as in the exports. In the former the chief increases have been in manufactured goods (£4,274,000); raw materials (general) (£2,720,000); and metals (£1,106,000). On the other hand, the greatest decrease has been in raw materials for textiles of £858,000. In the exports there has been an improvement all round. The greatest increase has been in yarns and textiles, amounting to close upon £5,000,000. Metals and their manufactures come next, with an increase of £3,393,000, followed by machinery, in which the advance amounts to £1,157,000. It is gratifying to note an increase of 335,739 tons, or 36.9 per cent. in iron and steel. The increase in value, however, is not proportionate, as it only amounts to £2,592,033, which is striking proof that prices have not been up to their proper level. But the outlook in this branch of business is promising, and these figures need not create discouragement. Galvanised sheets have also improved, the exports of this product showing an increase of over 37,000 tons, or £500,000 sterling. Our shipments of unwrought steel advanced to the extent of 40,000 tons, or £378,000, the most conspicuous increases being with Russia, Germany, and India. Altogether, we have every reason to be abundantly satisfied with the returns both for June and the half-year, for not only do they strengthen belief in the revival of our commerce, but hold out hopes that a time will come when the former rate of progress will be resumed.

### BRITISH GUIANA'S GOLD INDUSTRY.

The following is the amount of gold shipped by the R.M.S. *Solent*, which left Georgetown on Tuesday, June 23. The shippers were:—

Colonial Bank	2474 19 23
British Guiana Bank	3404 15 19
<b>Total</b>	<b>5879 15 18</b>

The following are the returns of gold entered at the Department of Mines for the week ending:—

	June 5.	June 12.
	Ozs. dwts. grs.	Ozs. dwts. grs.
Barama...	46 15 5	1 16 4
Barima...	469 8 0	656 14 20
Oyeni...	584 6 0	197 1 22
Demerara...	4 13 19	—
Essequibo...	258 5 18	408 0 0
Groote Creek...	12 19 18	35 2 12
Mazaruni...	—	—
Potaro...	332 6 14	2062 11 1
Peruni...	93 11 6	—
<b>Total</b>	<b>1802 6 8</b>	<b>3361 6 11</b>

Export of gold from January 1 to June 23:—

1895	49,094 3 13 at \$574,407.99
1896	51,921 19 1 at \$919,269.42

## THE MINING MARKET.

FRIDAY EVENING.

The markets deserted for Henley.—Unimportant fluctuations, and paralysed business.

THE task of the Israelites who were called upon to make bricks without straw pales into insignificance in comparison with the difficulties of the financial scribe who has had to make "copy" during the week just drawing to a conclusion. The old superstition as to the unsatisfactory character of a 19 days' account has been verified to the full. The counter attractions of Henley Regatta have drawn away members from Throgmorton-street, not single spies but in battalions. The markets have been completely deserted day after day and it is no figure of speech to say that there has been absolutely no business. Undersuch conditions no wonder need be expressed that quotations have sagged away from sheer lack of support. The only news that has cropped up during the week has been of a mildly discouraging nature, but this has had little practical effect, the market being as dead to impressions of one kind as to another. A good deal of strong criticism has been passed upon the action of the remnant of the Chartered board in making an issue of debentures at a discount to a few privileged financial houses without giving the option for participation to the ordinary shareholders. Under the influence of this unsatisfactory proceeding, the market in Chartered shares has proved amenable to the tactics of the bears, who were experiencing a little fright at the time when we were last writing. As soon as Chartered reappeared on the down grade the rest of the South African Market followed suit, and though losses are not individually serious, they represent an aggregate depreciation that is anything but encouraging to holders. The oppressive heat sets everyone talking of holidays, and if present indications are not utterly unreliable we are not likely to see any considerable activity in the Mining Market until August has come and gone.

On Saturday the market took an optimistic view of the improved position of the Chartered Company, and it was rumoured that something like 50,000 shares changed hands. The probability of a member of the Rothschilds firm joining the board was freely discussed, and the projected debenture issue was favourably regarded under mistaken conceptions of its conditions. Chartered made a pronounced advance upon the day, and the Associated shares responded to the better feeling. West Aust's 11s, however, were neglected, and there was nothing doing in Miscellaneous. On Monday details as to the Chartered Debenture issue were published by a news agency, and although attempts were made to put a rose-coloured complexion upon the business, the first signs of dissatisfaction were reflected in slightly lower prices all round. The Westralian and New Zealand departments were featureless. On Tuesday grumblings on the part of shareholders who considered that they had been hardly done by in not having a chance of subscribing to the much debated issue, found an echo in the ostentatious growlings of the bears, who set to work to reconstruct the position from which they were driven during the previous week. The news of Colonel Plumer's fight with the Matabele was also employed by the pessimists, and at the close most Kaffir prices were weaker. Westralians gave way under the lead of Lady Lochs, which were subjected to a determined attack by the bear party. There was next to nothing doing in the Miscellaneous Market. On Wednesday absolute stagnation reigned in all departments, the exodus to Henley affording sufficient explanation. A similar state of affairs prevailed on Thursday, whilst to-day, although the attendance of members was rather better, there were plenty of small sellers about, anxious to close up unsuccessful bull operations, rather than face the carry over in the morning. Things were positively flat during the best part of the day, but there was a slight rally towards the close, which in several instances restored the level for the day.

### South Africans.

The gold output at the Witwatersrand for the month of June, as generally announced by the London agent of the Chamber of Mines, shows a decrease of some 700 ounces in comparison with the preceding month. In this return nine companies are omitted, as before. Up to the time of writing we have not received the completed returns. The individual yields that have been announced during the week have been regarded as favourable. For instance, the New Primrose reports an increase of 780 ounces. The Kimberley Roodeport, an advance from 420 ounces to 1214 ounces, whilst Salisbury has turned out 550 ounces more than the May total. The Eckstein Group, which may be taken as representative of the more solid gold producing properties, has not suffered to any extent during the past week. Heriots at 9½, Jumpers at 7½, and Wemmers at 9½ are actually rather better than they were a week ago, whilst Goldenhuis at 3½, Jubilee at 9, Salisbury at 4, and City and Suburban at 4½ show a little, if any, depreciation. Ferreira has lost ½ at 21, Modders ½ at 6½, and Simmer and Jack ½ at 21. Meyer and Charlton have improved ½ to 5½, and Durban Roodeport ½ to 7, whilst Luipaard's Vlei are maintained at 2½, Robinson at 9½, Village Main Reef at 6½ and Worcester at 4½. All the Robinson stocks have maintained last week's quotations, Block B at 1½, Langlaagte at 5½, Randfontein at 2½, and Robinson Banks at 6½. Some weakness has been evident in the Barna's group Buffelsdoorn having lost ¼ at 2½, and Kimberley Roodeport ½ at 2½. In other cases however, the last prices are not more than ½ down, Barnato Banks closing at 2½, Glencairn at 3½, Johannesburg Investment at 3½, May Consolidated at 3, New Primrose at 5½, and Rietfontein at 3½. East Rands went up to 8 on Monday, but have since sagged away, closing ¼ down at 7½. Comets are 3½, and Angelo 5½. Rand Mines have lost half a point at 30½, and other Deep Levels have been neglected. Consolidated Deeps close at 5½, Roodeport Deep at 2½, Nourse Deep at 6, and Goldenhuis Deep at 5½. Van Ryns have lost ½ at 4½. An announcement has been made of the projected amalgamation of the Oceana, Austral-African, and Africana companies, which has had the effect of depressing Oceana to 1½, and slightly raising Austral to 1½. There has been some excitement in Rand Reef, which gave way under heavy selling until shares changed hands at 7s. on Thursday morning. Support was then forthcoming, which brought about a rally of 10s. Anglo-French are ¼ down at 5½, and Land and Finance Companies generally have been dull. Chartered are finally 3, after rising to 3½ on Saturday, and being offered under the figure this morning. Goldfields Deferred are half a point down at 12½. The vague rumour of which we alluded last week associating Lord Harris with the Chartered Company has received an explanation in the accession of that popular cricketer to the board of the Goldfields Company, of which Mr. Thomas Rudd

has now resigned the chairmanship. Gold Trusts have improved ½ to 8, but Goldfields are a similar fraction down at 11. A decline of ¼ is shown in Rhodesia Exploring at 5½, Klerksdorp have lost the turn of the market at 14s. 9d., as have African Estates at 2½, and Adler's Consols at 1½. Diamond shares have shared in the general dullness, losses of ½ to ¼ being marked in De Beers at 30½, Jagers at 1½, and Leicesters at 3½. The small Lydenburg shares have lost a few pence, but Spitzkops are firm at 1½. Transvaal gold is ½ down at 8.

### West Australians.

The feature of this market has been the raid upon Lady Lochs, which on Tuesday were offered as low as 2½, sellers basing their operations upon the statement that the ore in process of crushing was yielding only 2 ounces to the ton instead of 4 or 5 as previously. On the following morning this *canard* received official denial, and there was a prompt rally to 3½, at which the shares close showing a loss of ¼ on balance. Lake Views are maintained at 8½, after being rather better, and Associated, after some weakness and a subsequent spurt, are finally ¼ down at 3½. The feature of to-day's business has been a jump of ½ in Coolgardie Mint and Iron King to 2. Hannan's Brownhills have fallen ½ to 5½, Golden Treasure ½ to 1½, Hannan's Reward ½ to 3½, and Boulder East Extension ½ to 1½. Great Boulders were as good as 7½ on Monday on the publication of a fortnight's crushing return showing 3153 ounces of gold from 850 tons. The improvement, however, was not maintained, and the shares close ½ up on balance at 7½. Joint Stock Trusts have been taken in hand again by the wire-pullers, and put up to 3½. Another cornered stock, the Royal Sovereign, although quoted without change for account at 3½, was the medium of dealings as high as 5½ under the hammer. W.A. Goldfields improved to 10 on the issue of a half-yearly report, but gave way under realisations, closing ½ down at 9½. Mainland Consols have lost ¼ at 3½, Hampton Plains ½ at 4½, Colonial Finance ½ at 3½, Fingall's Reef ½ at 5, and London and Globe ½ at 3½, whilst W.A. Concessions have put on ¼ at 1½, and Share Corporation ¼ at 1½. White Feathers have lost ¼ at 1½, Hit or Miss ¼ at 2½, and Wealth of Nations ½ at 1½, whilst Golden Crown are maintained at 2½. The Ramage Group is better, the Syndicate shares having improved ½ to 4½, Black Flags ½ to 2, and Golden Puff ½ to 1½. Menzies Properties are round about last week's prices, Florence at 1½, Lady Shenton at 2½, and O'Driscoll at 1½.

### Miscellaneous.

There are very few changes to report in this section. Copper shares have been dull, Tintos losing ½ at 23½, Anaconda ¼ at 6½, Capes ½ at 2½, Mason and Barry ½ at 3½, Tuaris ½ at 5½. Broken Hills are rather better at 2½, with British unchanged at 1, whilst gains of ½ are marked in Mount Morgans at 3½, and Mount Lyell at 8½. Indians have moved irregularly, improvements of ¼ being scored in Mysore at 7½, and in Nundydroog and Ooregum both at 3½, whilst Champion Reef are down ½ at 7½. Wahi has lost ½ at 7½, and Silverton the same fraction at 3½, but other New Zealanders are without change. The only feature in Charters Towers varieties is an improvement in Day Dawn Block to 14s. Rumour has it that after the holidays we are to have a British Columbian mining boom.

### STOCK EXCHANGE SETTLING DAYS.

#### CONSOLS.

Wednesday, July 1.

#### MINING MAKING-UP DAYS:

Saturday, July 11. | Monday, July 27.

#### MINING NAME DAYS:

Monday, July 13. | Tuesday, July 28.

#### ACCOUNT DAYS:

Wednesday, July 15. | Thursday, July 30.

## THE NEW ZEALAND IRON AND STEEL COMPANY, LIMITED.

### TARANAKI IRON SANDS.

THE enormous deposits of magnetic iron sands perfectly free from phosphorous sulphur and other deleterious ingredients, forming the sea beach at New Plymouth, Taranaki, New Zealand, have for long years puzzled many ingenious minds to turn them to practical commercial purposes. Altogether there are over 40 miles of this beach, which is many feet thick, and which has been proved to extend over 300 yards below low water mark. The New Zealand Iron and Steel Company (Limited) have a lease of 10½ miles of this iron sand deposit subject to a royalty of 6d. per ton of iron smelted, and they propose to erect a blast furnace at New Plymouth, with an output of 300 to 350 tons weekly, together with the erection of the necessary plant for the manufacture of wrought iron and steel of all descriptions. Works of this description require supplies of other raw material in addition to the iron ore, and in this respect the company is fortunate, for they have in the same province unlimited quantities of limestone, coal, timber for charcoal, material for fluxes, sulphur, iron pyrites, and black oxide of manganese. The iron sands themselves contain 60 per cent. of metallic iron, 8 per cent. of oxide of titanium, and 8 per cent. of silica and olivine. Before treatment in the blast furnace it is made up with bricks hard and compact enough to resist the action of the furnace. These bricks consist of a mixture of 160 parts of iron sand, 50 parts of yellow clay, and 50 parts of blue clay, mixed in a pug mill, and then pressed in an ordinary dry brick pressing machine. The fuel used is also made up in the form of bricks, and consists of 10 cwts. of Mokau coal breeze (residue from gas retorts), 6 cwts. of raw bituminous coal, 2 cwts. of slag cement, and 2½ cwts. of coal tar. The process has been tried on an extensive experimental scale, and the products obtained are certainly excellent, as anyone can judge for themselves who will visit the offices of Messrs. Kinsley and Co., 66, Cannon-street, E.C. Here they will see clean castings direct from the blast furnace, as well as wrought iron and steel forgings prepared from this iron, which have been subjected to most severe tests, and stood them in a most satisfactory manner. The list of articles which have been made, and are open to the inspection of visitors, is too long to enumerate here. It will suffice to say that anything that can be done with iron and steel can be made from these iron sands, while the New Zealand Government, in order to promote the industry, have promised the company the refusal of all Government contracts at a price of not more than 10 per cent. above that of the imported material.

The development of the natural resources of other countries, and especially of those of our own colonies, is one in which *The Mining Journal* is deeply interested, while the successful treatment of these iron sands will open out a new metallurgical field and the operations of this company be closely watched with a view to the adoption of their process in other parts of the world, if they, as seems extremely probable, are commercially successful in their undertaking.



CORRESPONDENCE.

We wish it to be understood that we do not hold ourselves responsible for, and do not necessarily endorse, the opinions of correspondents. All communications must be accompanied by the names and addresses of the senders, though these need not necessarily be published.

THE ZYMEAN PROCESS.

TO THE EDITOR OF "THE MINING JOURNAL."

SIR,—In answer to Mr. Worsley's last letter, and many other queries that have reached me, I beg to be allowed to say that as to the formation of sodic sulphate in the Zymeian process of metallurgy, I do not profess to be able to explain accurately the reactions which go on in it, nor has any chemist yet undertaken to do so. I only state verified facts, which any experimenter can again ascertain. At the termination of the operation, if the solution, on being tested in ordinary manner, shows plenty of salt, NaCl, and no sodic sulphate (Na<sub>2</sub>SO<sub>4</sub>) or acid sulphate (NaHSO<sub>4</sub>), then the theoretical chemist may be astounded, but the practical chemist says:—"Facts are facts, and that fact is of great use to me." The practical metallurgist is highly delighted, and probably says:—"I don't care a button how, or why, but I shan't have to send for any more salt as long as that is the case, especially if Fe<sub>2</sub>Cl<sub>3</sub> will do as well." I am very much obliged to Mr. Worsley for his appreciation of that which I have tried to do for miners and mine owners, but he will allow me to say that I look with the most perfect indifference on statues in general—first, because they have more often been given to those who did not deserve them than to those who did, and next, because the statue has often led to crass idolatry. The only consolation is that no one whose memory is so attempted to be perpetuated can possibly know anything about it. Now, as to the quantity of gold obtained in practice out of that actually existing in the ore treated or mined. Every mining engineer who has had charge of a nuggety gold mine has many amusing stories to tell of speculation in his mines, and by what means he "spotted" the thieves. So, also, with mills and amalgam; but as with pure gold, in its finest state of division, the loss from wet crushing alone is put by M. Eissler at a steady 14 per cent., and no thiefing ever did so much as that continuously. Pecuilation is not the worst form of loss. Where dry crushing has been resorted to lately (without the stamps which make the dust fly) the 14 per cent. loss has already been considerably diminished; but other very serious losses occur where, in attempts at amalgamating ores which contain much base metal, lead to "sickening" or "flouring" of the mercury, and neither sodium amalgam nor electrical currents, nor any other nostrum, will set the matter right. Of course, in the Zymeian process, not a single one of these lamentable difficulties ever occurs. Whatever is not in the bones, must be in the soup. If the metals and metalloids are in the solution (which I call "the soup"), it is all right, and they will be precipitated in due course. If any of them are in the residue (which I denominate the bones), and this is seldom the case, the metallurgist goes to his laboratory and decides quickly how much, and of what value and nature, what change is required in the first operation, or whether it is worth treating over again. On the other hand, with complex ores I know that not seldom will the metallurgist find that he has beaten his fire assay very considerably. At this stage of the question I should like to point out that very rarely do we get any satisfactory statement as to assays of the quartered pulp subjected to treatment by whatever process, and the actual results in fine gold melted, taken hour by hour. If this return were always insisted on by the directors, we should, I venture to think, know much more about "losses" than we now can do, and be enabled to improve on existing extraction to a very considerable extent. Such assays of rock, whether they are of specimens or so-called averages of output, are no reliable guide, and never can be. Nothing will do this except pulp assays taken every hour, day, and night from the crushers, rolls (or stamps), carefully mixed in the laboratory, quartered and assayed, with check assay every 24 hours, and recorded in the day book over the signature of the assayer. If other assays are made for information these must be recorded elsewhere than with the regular and continuous record of daily work in this particular direction. One man in each shift, who may often be changed, fills a tin pot or pannikin each hour under the screens with pulp, and transfers it when the end of the hour has come to an enamelled iron bucket big enough to hold 12 such cupfuls. He takes this bucket himself to the assay office when he comes off shift, and the man in the next shift whose duty it is does the same. When the assayer comes to work he finds two buckets, one from the day and one from the night work. He either takes each separately, or quarters the whole, according to circumstances, and thus gets the average contents of the ore either for the 12 or the 24 hours last past. He will also, at uncertain hours, take intermediate samples for his own satisfaction. My own practice was to make, in this latter way, assays to confirm the work of the assayer himself, and when there was any doubt to make the millman, also an assayer, take a turn at it. This was with rich silver ore ranging from 50 up to hundreds of ounces to the ton, so that we were always kept on the *qui vive* by the very nature of the ore. I note that some of the many enquiries about the Zymeian process express a doubt lest from the treatment some gaseous emanations may arise, which might be dangerous to life. This is not the case. Three gaseous compounds are at different periods evolved. First and most continuously HCl (hydrochloric acid gas) easily made apparent by a glass rod held over it, having previously been dipped in ammonia water. Secondly, SO<sub>2</sub> sulphurous acid gas, or sulphur dioxide (a splendid precipitant of gold from these solutions), according in quantity with the quantity of sulphur in the ore. Lastly, in small quantity, N<sub>2</sub>O nitrous oxide gas, which, on issuing into the air, becomes NO (or N<sub>2</sub>O<sub>2</sub>) nitric oxide.

Now these gaseous bodies are all useful to us, and are accordingly all collected in one form or other. The chlorine is taken again by a well-understood process from a small portion of the HCl acid gas, and used to make S<sub>2</sub>Cl<sub>2</sub>. The sulphurous acid partly becomes sulphuric acid in the vat, and then acts on the NaCl to produce fresh nascent chlorine (the solvent required for the metals). The nitric oxide is also of value in another way. A coke tower gives us as, under the Muriatic Acid Gas Acts, weak hydrochloric acid from the larger part of the HCl acid gas which is delivered into it, and with the NO we can make H<sub>2</sub>SO<sub>4</sub>, so that nothing is wasted, and the Zymeian process is almost wholly self-supporting. This I have always regarded as a feature of the greatest value to mine owners in reducing costs, and, therefore, enabling them to meet their markets wherever competition has endangered profits, and almost killed metal mining in this country. Will my Welsh and Cornish friends forgive me for saying that dyna mite, single hand drills, are quite as essential to success as new processes, and that 12 hour shifts are not too much for a manly Briton, either at sea or on shore?

J. H. SALWYN, Admiral.

168, Gloucester crescent, Hyde Park.

THE PORT PHILLIP GOLD COMPANY, LIMITED,

TO THE EDITOR OF "THE MINING JOURNAL."

SIR,—The directors have awakened to activity, and have arranged to buy a property in the Broad Arrow district in West Australia, from which, after a good deal of fossicking, they found, "more or less blind-folded, 3 lbs. of stone, equalling about 33½ ounces per ton; they say it did not show gold to the naked eye."

The shareholders were asked at the meeting held yesterday to agree to the purchase of a 24 acre lease. "The consideration to be paid by the Port Phillip Company for the property (in West Australia) is £6000, as to £2000 in cash; the balance to remain on mortgage, and £50,000 in shares to be provided for in terms of the special resolution to be submitted to the meeting." A resolution was submitted that the capital of the company be increased to £100,000 by the creation of 200,000 new shares of 5s. each. That the new shares be issued as fully paid to the vendors of the Adelaide and Adelaide Extended claims, or their nominees; but that power shall be given to the said vendors, or their nominees or transferees, at any time, to convert the fully paid shares, or any part of them, into partly paid shares, credited with so much as paid up thereon as may be at the time paid up on the other shares of the company. If the shareholders of the Port Phillip Gold Company (Limited) are prepared to swallow this proposal, they must be very blind indeed. The Adelaide and Adelaide Extended claims had better be worked by the Adelaide people, if they can find 50 tons of stone in the mine that will give 33 ounces of gold to the ton, it will give them their cash price they are wanting to sell to the Port Phillip Company for, and then they can form a company for themselves. The Port Phillip Company had better stick to their own mine at Clunes, and work that effectively.

It came out at the meeting that the Chairman of the Port Phillip Company is also Chairman of the Idaho Syndicate, who are the vendors of the West Australian Mine proposed to be sold to the Port Phillip Company. A majority of the shareholders present at the meeting protested against the scheme, but on a poll being demanded, the proxies carried the resolution.—Yours truly,

T. CORNISH.

NEW ISSUES.

IVANHOE CONSOLS PROPRIETARY COMPANY (LIMITED).

The object of this company, which has a capital of £125,000, in £1 shares, is to acquire and further develop four mining leases known as the Ivanhoe Consols Amalgamated, Triby, and Little Billee, numbered respectively 1383, 1384, 1411, and 2491 E, comprising an area of 54 acres, or thereabouts, situated in the Hannan's district, Kalgoolie, Western Australia. The Ivanhoe Consols Amalgamated adjoins Hannan's 100 acres, and the Triby and Little Billee adjoin the Bon Accord Mine. These leases have been reported upon by Captain Oats, Messrs. Stapleton, Nyhan and Bibby, whose reports are of a favourable character. They state that there is an abundance of water for crushing, and that timber for all mining purposes is in plentiful supply. This company will acquire four separate leases, and the policy of the directors will be to develop and re-sell at a profit one or more blocks, as opportunity offers, retaining the remainder to be worked by the parent company, or dealt with as circumstances may suggest. Captain Oats, in his cabled report on the properties to be acquired by this company, says:—"All these properties occupy undoubtedly a very good position in the line of best mines. I can strongly recommend them to the investing public as a perfectly sound speculation." The resident manager, under date May 19, reports:—"Struck good lode, 23 feet in width, lease 1384, showing visible gold."

HANNAN'S DEVELOPMENT AND FINANCE CORPORATION (LIMITED).

This corporation was registered on March 5 for the purpose of organising and carrying on the business of a development and finance corporation on similar lines to other exploring and development companies, and principally for the purpose of acquiring options on mining and other properties, and dealing in shares of mining companies as well as engaging in the formation and issue of mining companies, the principal field of the company's operations being the Western Australian gold fields. The business of the corporation also comprises that of a financial and general agency business, the underwriting of new issues of proved undertakings, and the investment of capital in companies. Although the corporation has been at work for such a short period, the directors have been able to secure many important interests in the Hannan's district of Western Australia; also subsidiary companies have been formed, and valuable options and contracts secured, from which profits have resulted and a dividend has been distributed, leaving a considerable margin for the payment of additional dividends. In order that the corporation may be placed in a position to secure additional leases, and to complete the formation of subsidiary companies, the directors have decided to make a further issue of shares, and to invite public subscriptions to the same.

MAORI DREAM GOLD MINES (LIMITED).

With a capital of £130,000 in £1 shares, this company has been formed to acquire and work an important mining property situated at Ohui, in the Tairua district of the Thames Peninsula, New Zealand, about 9 miles from Waitekauri, and about a mile from the coast, comprising an area of about 45 acres, held under the usual mining leases. The official report made to the Minister of Mines, New Zealand, for the year ending March 31, 1895, and the developments made to date, together with the reports referred to later on, show that there is every probability of satisfactory returns being obtained by the systematic opening up of the property. Mr. A. H. Richards (Thames School of Mines, Kuaotunu), battery manager, reported upon the property for Mr. T. C. Kerry, in August, 1895. He states:—"They . . . are the best claims in the district; 6 tons of quartz and 3 tons of surface mullock were sent to Kuaotunu for treatment, and the following is the result:—6 tons of quartz yielded 24 ounces of retorted gold, 3 tons of mullock yielded 2 ounces retorted gold, without the tailings." He also states:—"I am informed that the reefs are large and easily worked, and ample water for motive power." Mr. A. Burcher (Messrs. A. Burcher and Co.), of Auckland, in a report to Mr. T. C. Kerry, in August, 1895, states:—"The reef is 3 feet thick, and shows gold freely, running through a soft sandstone country easily worked. There is a battery site, water race, and ample water power; there is firewood, water in abundance, plenty of timber, and a timber mill close at hand. I have examined this property very carefully, and consider it to be, without exception, the most valuable one that has been opened up for many years, and believe it to be a thoroughly bona fide mining investment." The list of applications for shares close on Monday next.

THE METAL MARKETS.

THE METAL MARKET, LONDON, JULY 10.

Copper.

THE speculative market opened on Monday firmer, with business at £49 12s. 6d., and £49 12s. 9d. s.o. G.M.B., but £49 16s. to £49 2s. 9d. s.o., and £49 12s. 9d. to £49 12s. 6d. three months were accepted on Tuesday, demand both from speculators and consumers being very indifferent, although the latter seem to have plenty of work in hand. Wednesday was another day of inactivity, the little business which was carried through being at the lowest prices named above, and prices were even worse on Thursday, though the resulting business was more extensive. The value dropped to £49 1s. 3d. s.o., and £49 5s. three months. To-day's market was, towards the close, rather firmer, and the final quotations are £49 2s. 6d. to £49 3s. 9d. s.o., and £49 3s. 3d. to £49 7s. 6d. three months.

Tin.

This market has been without any feature of interest, and the price variations have been limited to a narrow range. Some 400 tons of Straits tin were dealt in on each of the first two days of the week, spot realising £31 to £31 2s. 9d., and three months £31 12s. 6d. to £32. Wednesday was a very dull day, whilst Thursday was rather more active at down to the lowest prices named. To-day we had a quiet market, with business at £31 2s. 3d., and £31 2s. 6d. s.o., and £31 12s. 6d. and £31 13s. 9d. three months, and the two positions close respectively at £31 2s. 6d. and £31 13s. 9d. buyers. In Holland, Billiton tin ranged from 35½d. to 35¾d. s.o., and 36¾d. to 37d. three months, closing easier at 35½d. and 36¾d. respectively, with Banca at 37½d.

Pig Iron.

Scotch shipments for last week amounted to about 6500 tons, or slightly more than in the corresponding week of the previous year. The Glasgow market has ranged from easy to firm, with the value of a c. Scotch fluctuating from 48s. 3d. to 48s. 8d., and closing firm at 48s. 7½d. sellers, with hematite at 48s. 10½d., and Middlesbrough at 37s. 1½d.

Lead.

is quiet, but steady at £11 to £11 1s. 3d. soft foreign, and £11 5s. to £11 5s. 3d. English.

Spelter.

also quiet and rather easier at £15 to £15 2s. 5d. ordinaries, and £15 7s. 6d. specials.

Antimony.

is steady and featureless at £12.

Quicksilver.

unchanged at £8 10s. firsts and £8 9s. seconds.

The following are to-night's (July 10) prices of metals:—

	Copper	£ s. d.	£ s. d.
Tough cake and ingot	...	51 0 0	53 0 0
Best selected	...	52 10 0	53 0 0
Electrolytic Copper	...	52 15 0	53 0 0
Sheets and sheathing	...	...	53 0 0
Flat bottoms	...	...	53 0 0
Quill bars	...	49 2 9	49 7 8
Good merchantable, spot, & 3 months respectively	...	...	...
Copper tubes, seamless	...	...	0 0 8½
Alloys			
Brass: Wire	...	...	0 0 6
" Tubes (solid drawn)	...	...	0 0 7
" Sheets	...	...	0 0 6½
Phosphor Bronze: Alloys II...	...	...	...
" " III, or Cog Wheel Brand	...	...	81 0 0
" " VII	...	...	83 0 0
" " Vulcan brand A1	...	...	78 0 0
Duro Metal	...	...	72 0 0
Bull's Metal	...	...	65 0 0
Ferrobronze (Vivian's)			
Ingots	...	0 0 6	...
Ordinary sheets, plates, bolts and bars	...	0 0 7	...
Screw bolts and nuts	...	0 0 8½	...
Pump rods, plain	...	0 0 7½	...
" finished	...	0 0 10½	...
Delta Metal: No. 4 (per ton)	...	...	...
" Sheets and plates (per lb.)	...	...	...
" Bars, round, square, flat (per lb.)	...	...	...
" hexagon (per lb.)	...	...	78 0 0
Tin			
English, ingots, f.o.b.	...	...	65 0 0
" bars	...	...	66 0 0
" refined	...	...	67 0 0
Straits, spot, and three months respectively	...	81 2 6	81 13 9
Australian, spot, and three months respectively	...	82 2 6	82 13 9
Banca (in Holland)	...	...	82 7 6
FIN PLATES: Charcoal, best quality	...	per box 0 14 0	0 17 8
" ordinary	...	0 11 0	0 13 6
" Coke, best quality	...	0 9 6	0 10 0
" ordinary	...	0 9 6	0 9 0
These prices of tinplates are f.o.b. at Swansea; at Liverpool 6d. per box more.			
Iron			
Pig, G.M.B., f.o.b., Clyde, spot	...	...	46 0 7½
" Scotch pig, No. 1 Gartsherrie	...	...	210 3
" " Coltness	...	...	212 6
" " Clyde	...	...	212 6
" " Govan	...	...	212 6
Bars, Welsh, f.o.b. Wales	...	...	21 7 1
Plates	...	...	5 5 0
Bars, Staffordshire, at works	...	...	5 5 0
Sheets	...	...	6 10 0
Plates	...	...	6 7 6
Hoops	...	...	5 15 0
Ship plates, Middlesbrough	...	...	5 0 0
STEEL: English spring	...	...	10 0 0
" " cut	...	...	42 0 0
" Rails at works, according to section	...	...	5 0 0
Lead			
Spanish or soft foreign	...	11 0 0	11 1 3
English pig, common	...	11 5 0	11 7 6
" L.B.	...	...	11 12 6
" sheet and bar lead	...	...	12 2 6
" pipe	...	...	12 12 6
" red	...	...	14 0 0
" white	...	...	17 10 0
" patent shot	...	...	14 15 0
Spelter			
Silesian ordinary brands	...	15 0 0	15 2 6
" special brands	...	...	18 7 6
English Swansea	...	...	18 17 6
Sheet Zinc	...	...	21 0 0
Antimony			
Antimony	...	...	30 0 0
Quicksilver			
Fishes, 75 lbs warrants	...	5 9 0	6 13 0
Ore, c.l.f., U.K. ports	...	...	per unit.
1st quality, 50 per cent. and upwards	...	0 0 11	0 1 1
2nd " 47 per cent. to 50 per cent.	...	0 0 10	0 1 0
3rd " 42 " 47 per cent.	...	0 0 9	0 0 11
Aluminium			
98-99½ per cent.	...	per lb. 0 1 4½	per lb. 0 1 6
Nickel			
98-99 per cent. guaranteed	...	0 1 2	0 1 4

We learn that a company is in process of formation which will soon apply to the public for subscriptions to enable them to carry out a unique enterprise in the history of gold mining. This company will acquire the rights and powers conferred by three Acts of the Legislature of British Columbia—viz., The Quesselle Lake Dam Company Act, 1881; an Amendment Act dated May 12, 1893; an Amendment Act, dated February 21, 1895, granting the exclusive right to the gold and precious metals in the entire length of the South Fork of Quesselle River, and a portion of the main Quesselle River, about 9½ miles in the district of Cariboo, British Columbia. The plans for the construction of the dam have been approved by the Government of British Columbia, as provided by the Act of the Legislature. There are reports from several eminent experts which state that immensely rich deposits of gold are to be found at the bed of this river, which is to be won in paying quantities as soon as the arrangements for damming the stream are completed. The capital of the company, we understand, is a very moderate one, and there is ample reservation for working expenses. The directorate is influential.

The MYSON GOLD MINING COMPANY (LIMITED) has sold the gold obtained during the month of May last, which realised £34,342 19s. 6d.



alaghat Mysore G	2/8	3/8	2/8	3/8	1 0	—	1 0 C	168,007	India .....	6-7, Queen-street-p
urma Ruby.....R	3/8	3/8	1 3/8	1 1/8	1 0	—	0 18 0	298,370	Burmah...	Suffolk House E C
hampion Reef... G	7 1/4	7 1/4	7 1/4	7 1/4	1 0	4/- Apr. 29 '98	1 0 0	211,646	India .....	6-7, Queen-street-p
olar Central ... G	1 1/8	1 1/8	1 1/8	1 1/8	1 0	—	1 0 0	206,0 0	"	Dashwood Ho., E.O.
oromandel..... G	2 3/8	2 3/8	2 3/8	2 3/8	1 0	—	1 0 0	120,000	"	6-7, Queen-st.-place
old Fide Mysore G	25/ 88/	85/8 28/8	85/8 28/8	85/8 28/8	1 0	2/- Feb '98	1 0 0	229,000	"	6-7, Queen-street-pl
old Mysore.....	8/ 7/	7/3 7/9	8/	8/	1 0	—	0 50	4,0 0	"	Capthall House, E.C
empkins G & R	9/ 1/3	1/ 1/6	8/	8/	1 0	—	0 40	575,710	India .....	6-7, Queen-st.-place
ly, Harnhall..... G	7 1/4	7 1/4	7 1/4	7 1/4	1 0	6/ June 23 '98	1 0 0	248,354	"	6-7, Queen-street-pl
" Keels.....G	7/6 1/	7/6 1/	7/6 1/	7/6 1/	1 0	—	0 18 0	100,007	"	2, East India Avenue
" West(N)G	8/8 9/8	7/ 8/	7/ 8/	7/ 8/	1 0	—	0 19 0	160,000	"	6-7, Queen-street-pl
" Wynaud.....G	3/8	3/8	3/8	3/8	1 0	10/- Jan. 18 '98	0 19 0	127,408	"	2, St. Winchester St
ine Keels .....	8/6 8/8	8/ 8/	8/ 8/	8/ 8/	1 0	10/- Jan. 16 '98	0 18 0	123,000	"	—
undroog.....G	3 1/8	3 1/8	3 1/8	3 1/8	1 0	2/- June 26 '98	1 0 0	200,000	"	6-7, Queen-street-pl
urgang (102) Prof.	4 3/4	4 3/4	4 3/4	4 3/4	1 0	4/6 Apr. 11 '98	1 0 0	145,000	"	"
(102) Prof.	3 3/8	3 3/8	3 3/8	3 3/8	1 0	4/6 Apr. 15 '98	1 0 0	107,011	"	"
uang Amang T	1 3/8	1 3/8	1 3/8	1 3/8	1 0	2/6 Apr. 15 '98	0 6 0	12,389	"	"
" Corp.....G	3/4	3/4	3/4	3/4	1 0	—	1 0 0	200,000	Malay Pn.	4a, Jeffery's st. H.O.
erakonda.....G	7/9 1/3	7/9 1/3	7/9 1/3	7/9 1/3	1 0	—	0 4 3	187,491	Mysore ...	6-7, Queen-street-pl



AUSTRALIAN AND NEW ZEALAND MINES—(Continued).

Anglo-Chilian P.N.	8 1/2	9 1/4	8 1/2	9 1/4	10 0	7/0 Feb. 27 '96	10 0	35,000	Antofagst.	122, Bishop's-st W
" 6% Rylist M.B.	107	110	107	110	100 0	6% July 1 '96	100 0	\$200,000	S. Luis ...	3 & 5, Queen Street,
Argen. Concessions	1/	2/	1/	2/	2/	—	0 20	150,000	Venezuela	57, Moorgate-st. E.O
Caratal .....	G	3/5	3/5	3/5	3/5	—	0 26	1,330,000	Peru .....	52, Leadenhall street
Caylloma .....	S	3/5	3/5	3/5	3/5	1/— Apr. 94	2 00	125,000	Colombia	5, Ophthal-bdge, E.O
Coion .....	G	3/5	3/5	3/5	3/5	—	0 40	\$80,000	Chill .....	17, King-st, Liverp'l
Colorado Nit. ....	N	1 1/4	1 1/4	1 1/4	1 1/4	2/6 Dec. 16, '95	2 00	32,000	Colombia	10, Blomfield-street
Colombian Hy...G		3/4	3/4	3/4	3/4	1/— Jy 28, '95	1 00	75,000	Chill .....	Dashwood House, E.O
Coplapo .....	C	2 1/2	2 1/2	2 1/2	2 1/2	2/ May 29, '96	1 00	100,000	Colombia	Manchester,
Darien "A" .....	G	7 1/2	7 1/2	7 1/2	7 1/2	1 0	1 00	49,563	"	"
" "B" .....	G	9 1/2	9 1/2	9 1/2	9 1/2	1 0	1 00	30,620	Venezuela	2, Bishopsgt.-st. Wa
El Callao .....	G	3/4	3/4	3/4	3/4	9 1/2 Feb. '94	5 00	\$57,400	Colombia	124, Gresham House
Frontino & B...G		3/4	3/4	3/4	3/4	8d. Jan. 18 '94	1 00	128,662	Arg. (A.L.)	3-5, Queen-street, E.O
Glenrock .....	G	1/8	2/	1/8	2/	1 0	1 00	195,948	Colombia	10, Blomfield-street
Gravel .....	G	1/8	1/8	1/8	1/8	1 0	1 00	100,000	Honduras	14, Union st. Old Brd
Guadalupe .....	GS	3/8	5/	3/8	5/	1 0	1 00	120,000	Nicaragua	139, Cannon-street.
Julia Taital .....	N	—	—	—	—	1 0	1 00	105,234	Tarapaca	3, Gracechurch st;
Lagunas .....	N	2 1/2	2 1/2	2 1/2	2 1/2	5 00	5 00	120,000	Chill .....	70, "
Lautaro .....	N	5 1/2	5 1/2	5 1/2	5 1/2	5/— June 29 '96	5 00	110,000	"	Liverpool.
Liverpool .....	N	8	8	8	8	5/— May 14, '96	8 00	22,000	Colombia	5, Ophthal-building.
Loma .....	G	1/8	1/8	1/8	1/8	1 0	1 00	300,000	Chill .....	9, Gracechurch-st.
London Nit. ....	N	1 1/2	1 1/2	1 1/2	1 1/2	3/4 Nov. '91	5 00	19,000	"	"
" Hit. (Prof.) ..		3/4	3/4	3/4	3/4	8% Nov. 28 '95	8 00	22,000	Peru .....	11, Old Broad-st, E.O
Macate .....		1/—	1/8	1/	1/8	2/—	0 20	200,000	Tarapaca	50, Lime-street, E.O
New Tamarugal N		3/4	3/4	3/4	3/4	1 10	1 10	130,000	"	"
" 8% Cum Prof		10 1/2	10 1/2	10 1/2	10 1/2	8 p.c. Feb. '95	1 10	130,000	"	"
" 6 p.c. Debs ...		88	94	88	92	8 p.c. Feb. '96	100 0	\$260,000	Colombia	18, Blomfield-street
Orita .....	G	1/	1/8	1/	1/8	1 0	1 00	30,000	Brazil .....	6, Queen-street-place
Ouro Preto .....	G	1/	1/8	1/	1/8	1 0	1 00	80,000	Tarapaca	3, Gracechurch-st.
Pae. & Jarampa N		7/8	1 1/4	7/8	1 1/4	5 0	8 00	72,000	S. Luis ...	3 & 5, Queen Street.
Phoenix .....		1/8	1/—	1/8	1/—	10/—	0 00	400,000	Venezuela	34, Nicholas Lane.
Quebrada .....	C	1 3/4	3/4	3/4	3/4	3 0	3 00	241,958	Chill ...	7 1/2 Old Broad-stree
Rosario .....	N	5 1/2	5 1/2	5 1/2	5 1/2	5/— Feb. 12 '96	5 00	120,000	"	"
" (3 Feb.) .....		104	107	104	107	5% Apr. 1 '96	100 0	\$475,000	Brazil .....	Finsby Ho., Blim'd st
" Hu'r Db Scrp		103	116	103	108	5% July 1 '96	100 0	\$200,000	Chill .....	12, King-st, Liverp'l
St. John del Rey G		3/4	3/4	3/4	3/4	1 0	1 00	327,850	"	9, Gracechurch-st
Sau Donato .....	N	3/4	3/4	3/4	3/4	8/5 May 24 '96	5 00	32,000	"	Dashwood House E.O
" Jorge .....	N	5 1/2	5 1/2	5 1/2	5 1/2	5/— Oct. 20 '95	8 00	29,000	Brazil .....	Liverpool
" Pablo .....	N	1 1/2	1 1/2	1 1/2	1 1/2	5 0	5 00	29,000	Tarapaca	3, Gracechurch-st.
" Sebastian .....	N	1 1/2	1 1/2	1 1/2	1 1/2	10/	0 10	80,000	Chill .....	Dashwood House, E.O
Santa Barbara G		3/4	3/4	3/4	3/4	5/— Nov. 15 '94	5 00	22,000	Tarapaca	3, Gracechurch-st.
" Elena .....	N	3/4	3/4	3/4	3/4	5 0	5 00	22,000	Chill .....	Dashwood House, E.O
" Rita .....	N	3/4	3/4	3/4	3/4	5 0	5 00	24,000	"	"
Toftina "A" .....	S	4 1/2	5 1/2	4 1/2	5 1/2	5 0	5/— Mar. 12 '96	5 00	19,000	18, Finsbury-circus,
" "B" .....	S	4	5	4	5	5 0	5/— Mar 12 '96	5 00	9,000	"



**HANNAN'S OROYA.**—Manager's report for fortnight ending May 20 : Oroya main shaft, 107 feet level sunk to total 135½ feet. Splendid sinking. North drive extended to total 54 feet. This drive has been on the hanging wall side of the lode. A crosscut has been started at this point to reach the footwall so as to determine the position of the South drive extended to total 5 feet. The lode is very well, and good stone is being raised. Western crosscut down to total 74 feet; no change to report. Have ceased driving, and shall continue to test country in that part of block. Air shaft sunk to total 32 feet. Royal Mint west (prospecting) sunk to total 42 feet. The lode is underlaying to the east and rather small. No. 2 prospecting shaft is underlaying to west and becoming stronger, which I shall continue to cut the lode. No. 3 shaft (prospecting) sunk to total 40 feet. This lode is 2½ feet wide, and good results are obtainable by water assay.—No. 1 shaft, Eastern crosscut extended to total 22 feet.—(Signed) Wm. Oats.



1. *Journal of the American Medical Association*, 1997; 278: 1039-1044.



**ALAMILLOS.**—Mine report, dated July 1: In the 40 fathom level driving east of Santa Agueda's shaft the lode continues regular and compact, and is valued at 1 ton per fathom. The lode in the 70 east of Santa Agueda's shaft is valued at 1 ton per fathom. The 150 west of Taylor's engine shaft has just passed through a strong crosscut. The lode is still unsettled. In the driving of the 160 east of the same shaft nothing of value has been met with up to the present. The 100 east of Judd's shaft continues to lay open rich ore ground, valued at 4 tons per fathom. Hermann's winze sinking below the 60 fathom level valued at 1 ton per fathom. The lode is regular and well formed. Marqu's winze sinking below the 100 fathom level has been temporarily suspended, and the men have been put to sink Juan's winze, which is situated nearer Judd's shaft and at the eastern end of the "bunch." The lode in the latter winze is worth 1 ton per fathom. Diaz rise in bank of 100, valued at 1 ton per fathom, has been suspended, as Hermann's winze will probably hole to it in the course of the current month. The stopes continue to yield well. Surface works are kept on with regularity, and the machinery is in good working order. Estimated raisings for July 200 tons. The tributers returned 43 tons of mineral in the past month.

**BIG BLOW.**—Copy of report received from Mr. W. M. Vivian, mines manager, dated May 27: Herewith I beg to confirm my cable to Youenore giving the result of the Big Blow crushing—viz.: Total amount crushed is 106 tons. Quinches of gold, 31. Average sample of tailings gives 10 dwts. per ton nearly. The actual figures of the gold contained in the tailings were 9 dwts. 19 grains. This great loss is occasioned by our being compelled to use the same water over and over again, which gradually gets so thick as to refuse to run through the battery screens, and while in this state it carries off the whole of the fine gold in the quartz. This fact I have abundantly proved by assays. For instance, we started this morning with a clean fresh supply of water, and our loss in the tailings was only 1 dwts. 7 grains, but as the water got gradually thicker through the day the loss amounted to 6 dwts. at night, while to-morrow it will be higher still, increasing until the water gets so thick to run. This will necessitate some shutting down the battery until sufficient water accumulates in the water shafts to enable us to make another short run. Two-thirds of our gold is disseminated through the quartz in a very fine state, and without an abundant supply of clean water we cannot hope to save it. By the word quartz you will understand the whole of the gold-bearing formation is included, and which as you are aware consists of ochres, hematites, and clays, all with a large tendency to slime, and of which it is impossible to make a hand selection previous to crushing.

**FORTUNA.**—Mine report dated July 1: Canada Inco's Mine. In the 110 fathom level driving west of San Pedro's shaft the end is in the crosscut, and the lode is disordered. Good progress continues to be made in the sinking of San Pedro's shaft below the 110 fathom level. Los Sildos Mine. The lode in the 212 east of Taylor's engine shaft has improved in the past week to 1 ton per fathom. The 200 crosscut south of the same shaft has gone through more branches, but not of any value. In the 52 west of Palgrave's shaft there is no improvement at present.

**GREAT FINGALL REEPS.**—Report for the week ending May 18:—Block 385. No. 1 shaft, 50 feet level. Reef 8 inches in width, and carries good gold. South drive on reef B 5 feet driven, length 14 feet. West crosscut, 5 feet driven, length 5 feet. Four men employed. Cost per foot, 25s. 3d. This crosscut is being put in to prove reef A at the 50 feet level. Block 386. No. 3 shaft (main) 102 feet level. No drive on reef E. 12 feet driven, length 73 feet. Six men employed. Cost per foot, 25s. 5d. The reef averages 2 feet in width, but shows no improvement in gold value. West crosscut, 8 feet driven, length 10½ feet. This crosscut was started to prove reef D. The reef has now been cut, and is only a few inches wide. This crosscut will be continued only a few feet further for the present, though it is eventually intended to connect with the E crosscut from No. 1 shaft. Block 385. No. 3 shaft, 50 feet level south drive on reef. 8 feet driven, length 12½ feet. Two men employed. Cost per foot, 25s. 5d. Reef averages 3 inches in width, but poor in gold. Erection of plant. The foundations for boiler stacks are now completed, and a start has been made with the building in at the boiler. All loose material from the excavations has been removed from the front of the battery, and has been used in building up the feeding floor at the back of the battery. Good progress has been made with alterations to the smoke stacks. (Signed) G. W. W. Mackinnon, mine manager.

**LINARES LEAD.**—Mine report, dated July 1: Pozo Ancho Mine. In the 200 fathom level driving east of Warner's crosscut the lode contains a few spots of ore mixed with carbonate of lime. The lode in the 200 west is unproductive. In the 175 west the lode is very wide, and turns out good stones of lead ore, and is valued at ½ ton per fathom. The 200 west of Peill's engine shaft also turns out some stones of ore, but only occasionally. In the 175 west of the same shaft the lode is small and poor. No. 280 winze sinking below the 175 fathom level the lode has become unproductive. The stopes continue to yield well. Surface works are kept on with great regularity, and the machinery is in good working order. Estimated raisings for July 200 tons. The tributers returned 59½ tons of mineral in the past month. Los Quinientos Mine. Taylor's engine shaft. In the 200 east the lode is rather smaller and the ground hard for driving through is large and strong, and is valued at 2 tons per fathom. The lode looks kindly for a further improvement. In the 165 east the lode is split into branches, and contains but little ore. The lode in the 150 east is wide, but is chiefly composed of carbonate of lime. Victoria's winze sinking below the 135 fathom level the lode at present is unproductive. Estimated raisings for July 150 tons. The tributers returned 47 tons of mineral in the past month.

**QUEEN CROSS REEF.**—Manager's report for fortnight ending May 12: No. 2 drive east driven 16 feet, making a total of 21 feet from the shaft, and carries 2 feet of good quality stone. Have started the leading stope over this drive, which shows 2 feet 6 inches of good quality stone. The No. 2 west drive has been extended 15 feet, making a total of 20 feet from the shaft. This drive averages about 2 feet of good quality stone in the face. Have not started stope on this side as yet. No. 1 drive east has been driven 8 feet, making a total of 154 feet from the shaft. There are 5 inches of fair quality stone in the face. The stopes over this drive varies from 6 inches to 2 feet of fair quality stone. Retorted the amalgam in hand last Saturday, which yielded 554 ounces 13 dwts. of retorted gold. Expected to have all the stone through the battery the latter part of this week. There has been 590 tons taken through the battery, which leaves 20 tons in the paddock. The quantity raised for the fortnight is 100 tons.

**SALISBURY MURCHISON.**—The following report upon the property for the month of May has been received by the directors:—Salisbury. The winding engine was started on the Salisbury lease on May 25. Everything in connection with the machinery went smoothly. During the month the following parcels of stone have been retorted in the public batteries:—Salisbury lease. No. 1 level, 138 tons produced 17 ounces of gold. Agamemnon engine shaft, 50 tons produced 51 ounces of gold. Tasmania winze, 55 tons produced 24 ounces of gold. The north drive No. 1 level, Salisbury lease, has been driven a total distance of 51 feet from the crosscut. The lode has been disturbed for a distance of 56 feet. The south drive, same level, has been driven 52 feet from the crosscut. The lode in the face of this drive is 4 feet wide, and shows signs of improvement, but the ore at present is low grade. The crosscut at the 100 feet level is in 12 feet from the shaft. I expect to cut the reef at a point about 45 feet from main shaft. Agamemnon lease. The engine shaft has been sunk a total depth of 156 feet. The lode continues very solid underfoot, and measures 3 feet wide. This reef will give satisfactory returns when we have reached water level, and begin to open out on it. Judging from the appearance of the ground in the bottom of the shaft, I think we shall cut water during next fortnight. Tasmania. The winze has been sunk a total depth below the 50 feet level of 60 feet. I have obtained one month's exemption from the labour covenants on this lease to enable me to concentrate the labour on the Agamemnon main shaft. The warden has also granted one month's exemption on the North Agamemnon and Huntingtower lease, with a recommendation to the Minister of Mines to extend each application to six months. We have been fortunate in getting the adjoining block on the north-west side of the Agamemnon forfeited. The lode in the main shaft is underlying towards this ground, and I believe the acquisition of this new claim will be of great value later on as the engine shaft gets deeper on the course of the lode. E. Wattie.

**MYSORE WEST AND THE MYSORE WYNAD CONSOLIDATED.**—Tank Mine. Half-monthly report to June 16: South shaft 607 levels No. 1 drive north on west lode has been driven to a distance of 122 feet 9 inches, progress 10 feet 9 inches. The lode in the end is 2 feet wide and is worth 6 dwts. per ton. No. 2 drive south on east lode is in 107 feet 6 inches, progress 3 feet 6 inches. The lode is 1 foot 6 inches wide, and is worth 8 dwts. per ton. No. 3 drive north on east lode has been driven to a distance of 100 feet, progress 3 feet 6 inches. The lode is still very mixed, but shows 3 feet of quartz, worth 6 dwts. per ton. We have started a rise in the back of this level to hole to the 450 north winze on east lode, and have carried it up 3 feet 6 inches; the quartz is 3 feet wide and is worth 6 dwts. per ton. Walker's shaft is down 84 feet 6 inches; the ground is very hard, and we still have lots of water. The work in the mine was resumed on the 11th inst., and we are hoping that the cholera scare is over.

**RICHMOND CONSOLIDATED (Coolgardie property).**—The following report has just been received from the manager:—The main shaft has been sunk 6 feet, total depth 199 feet. The water supply has largely increased, and the shaft is now making about 800 gallons per day. I intend to sink another foot or two now that the supply is increasing so, and then to drive for the reef. In sinking we have cut a leader 13 inches wide. This is splendid-looking stone, and gives a very good prospect when dollied. The country appears to be far more settled, and I am in hopes that when we cut the reef it will be thoroughly settled, and have well defined walls. From the course this leader which we have cut is taking I think it will very shortly run into the main reef, and if so we shall very likely get some very good stone where it junctions with the lode. I shall very shortly erect a whip at this shaft, as the supply of water now keeps the windlass man going, and, consequently, makes the progress of the sinking slow. Besides the sinking done this week there has also been about 14 feet timbering done. This could not be done before, owing to our not being able to get the timber necessary. If we can get a supply of water (say) of 2000 or 3000 gallons per day in the next few feet of sinking, the sale of this, until we need it ourselves, will almost, if not quite, pay the expenses of working the property. As soon as we cut the reef from this shaft we shall have to sink the underlie to the level and connect, as the air in this shaft at present is very bad. The country we are now in has a more settled appearance altogether, and I am expecting to do the same several other neighbouring mines—that is, strike it rich below the water line.

**ACHILLES GOLD FIELDS (New Zealand).**—The following are extracts from the report, dated May 20, received from the managing director at the mines:—I would explain what appears to you an anomaly—that is, the exceeding richness of some of the stone without more noticeably raising the amount of return. It so happens that our mines, as most of the South Island mines, produce a fairly uniform quality stone, generally from large sized lodes, but always carry more or less rich turns either on its face, centre, or footwall, and so raise the general average. Ours is higher than usual in consequence of the stone reported, but it is always the case in either of our lodes that when these rich patches appear the lode is abnormal in size, reaching in some instances to 18 feet. The instances referred to in the cablegrams on the north lode widening from 3 feet to 8 feet, and having no special machinery for these rich ores, they all get mixed in the general crushing. The sinking for the No. 5 level is now down 79 feet. On the middle and main lodes, the sinking being on the former, producing rich stones forming a body of quartz 5 feet wide, then generating into a mixed body, which at present has no walls to determine its width. We are breaking out the main lode for the purpose of bringing the rails down. The winze on the north lode immediately opposite, and will shortly be down to crosscut the whole body. I am presuming to get a large body of good profitable ground here, at least 30 feet wide, so you will judge that my prospect for quartz is really very good. Now I return to my capital expenditure. You are aware that the haulage and truckage is done twice over. To remedy this state of things and reduce the cost of quartz getting from 23s. 6d. to 16s. or less, we have a new punt and hauling shaft in hand of three compartments. This has been a tiresome and expensive job, but it will be a valuable work when finished, and the whole work will be done entirely by water power. Of the battery water races one is complete, the other will be so in a fortnight, and then the alteration to the machinery will be effected. This work has all been paid for out of profits, so with the reduction in the cost of working, and increase of quantity, I hope generally to keep up the quality, and to see you in receipt of very regular dividends. You will observe I am very definite in my ideas of the mine. I think our prospects warrant me. I am so thoroughly conversant with the mine that I am not speculating.

**AUSTRALASIAN.**—Mine report of Mr. John James, manager, dated May 21: During the past fortnight the shaft has been sunk 22 feet, total 846 feet, and timbered 27 feet, total timbered 833 feet. The country sunk through is hard conglomerate and breaks very small. I believe we are through the top bed of gold-bearing country, and it is between 50 and 60 feet thick—768 feet level. The crosscut at this level has been extended 13 feet for the past nine days with three men. The crosscut is now in 46 feet in good country. The pulley wheel was fixed in position on the 10th inst. Everything about the mine and machinery is in good working order.

**BAYLEY'S No. 2 SOUTH.**—Copy of report received from Mr. W. M. Vivian, mines manager, dated May 27: For the past fortnight our operations have been as follows:—In the winze at the 100 feet level a further depth of 6 feet has been sunk, making the total depth 17 feet. The reef is 12 inches wide, and carries a trace of gold only. At the 100 feet level south 10 feet has been driven, making the total distance from the crosscut 27 feet. The reef is 8 inches wide and worth ½ ounce of gold per ton. The 100 feet level north has been advanced to 18 feet from the No. 1 shaft. The reef is 18 inches wide, and worth about 5 dwts. of gold per ton. At the water shaft timbering and securing is being carried out.

**CARRINGTON.**—The manager's report states: The fact that ore yielding 27 dwts. to the ton is within 30 feet of our boundary should encourage us to find the reef and work it. The winze on the Victoria reef shows that the reef is from 6 to 18 inches thick with 2 feet of foundation. The stone in the Caledonia reefs prospects 1½ ounces to the ton the country rock having an easier appearance for shooting as depth is gained.

**GEM OF CUE.**—Manager's report for month of May:—In giving you a resume of works in progress, I will refer you to plan now in your possession. Taking shaft A, I have forwarded samples from the lode, embracing about 30 feet of drive east, which has given an assay return of 2 ounces 18 dwts. and 2 ounces 14 dwts. respectively to the ton. (Two samples from various parts.) The north reef (K), as in plan, produced 3 ounces 2 dwts. and 1 ounce 17 dwts. from different portions the lode. From G (a portion of the mine I have not yet prospected or developed to any extent) the assay yield from open cuts between shafts is 1 ounce 4 dwts. per ton. I will make an effort to develop property at eastern end (G and H). There is even better gold to be obtained there than assay value shows. In general developments I have continued drive in water shaft (A) to a distance east of 78 feet. The lode is much disturbed at end of drive. I am hopeful and anxious for a change. I am now driving west, where lode is well developed and carrying good average gold as per assay. I will continue this drive and ascertain the length of shoot. The drive west is now in 12 feet. At the end of the east drive in this shaft I have put in a crosscut through formation of a sedimentary nature, but so far obtained no satisfactory results. Very good progress has been made with the main shaft, which is now down 59 feet. C shaft should shortly break through into east drive from A shaft, which will thoroughly ventilate that portion of the mine. Work generally is being pushed on, and the property will become a good dividend-paying concern as the mine is developed.

**GROOFTON EXPLORATION.**—The manager (Mr. C. F. Alston) writes under date, June 12: The ground bored through is getting better, although still jointy, when the sediment tube arrives greater progress will be made.

**LADY LOCH.**—Our manager reports as follows: I am forwarding you by this mail photographs of the opening of the Lady Loch Gold Mining Company's machinery, and am pleased to state that everything started very successfully. The machinery on the mine is first-class and does credit to the mine, and I am sure the mine will do credit in the future. I am breaking as much stone as I can, and as soon as I get the connection made between the main shaft north crosscut, and the prospecting shaft, and also the connection with the No. 1 winze east, I will be able to break a very large quantity of stone at a very small expense. The stopes above the 100 feet level from the prospecting shaft east drive are turning out some splendid stone, and I feel confident that we can keep up very satisfactory returns.

**MENZIES GOLD ESTATES.**—Extract from letter from the manager at the mines, Menzies, dated May 22:—Aurelia, south shaft. The formation in bottom level south is 5 feet wide. We have driven 6 feet during the week, present length of level 15 feet. The north drive has been driven 5 feet, and the formation is from 4 to 5 feet thick, with several small quartz streaks through it. We have sunk No. 1 shaft (Aspasia) 10 feet since last report. The formation is about 2 feet wide. The reef in No. 2 shaft continues 2 feet in thickness. I took two samples this week, one for 16 inches wide, which ran 1 ounce 5 dwts. 1 grain, and one for the whole width 2 feet, which assayed 1 ounce 17 dwts. per ton. The reef shows visible gold every breaking. Total depth of shaft 73 feet.—Etrenna. The new shaft started, which I will call No. 1 west, has been sunk 11 feet, and is timbered and windlass put on. I have started another prospect shaft on a reef running east and west and underlying north.—Cleone. The perpendicular shaft on this lease is being sunk. Progress for the week 13 feet and timbered.

**MOUNT ROWE CONSOLIDATED.**—The following report has been received from the manager: Regina north. The drive north has been extended 30 feet 6 inches, total length of drive 120½ feet. The reef is about 2 feet wide, and gold is visible to the naked eye in several pieces of the stone. This is the best stone which has been got out of this drive so far, and I am in hopes that we are getting in the close vicinity of some very rich stone.—Drive south. The drive on the lode has been connected with the shaft. Total length of drive from crosscut 19½ feet. The average width of the reef is 6 feet 8 inches, and is very good stone indeed. There is not very much visible to the naked eye in this stone, as the gold is too fine, but by being dollied a splendid prospect is obtained. After connecting with the shaft we started a drive south on this lode, and we are now in 6 feet. The width of the reef at the face of this drive is 5 feet 9 inches, and this stone is as good in appearance as

any raised, and also gives as good a prospect, I intend starting to sink the main shaft another 20 feet or so. This I think will give us a good supply of water, and we shall then be able to cut the reefs below the water line. This I am very anxious to do, as all the reefs in this country greatly improve below the water level.

**MCKENZIE.**—Fortnightly report of Mr. D. W. Welch, mine manager:—Main engine shaft, 120 feet. South drive advanced 6 feet, total distance from shaft 29 feet. Lode from 4 inches to 22 inches wide, estimated yield 1 ounce gold per ton. The lode in this drive is in the shape of the letter A. Will sink a winze on this new make of stope during the coming fortnight.—No. 1 shaft, 40 feet level. Nos. 2 and 3 stopes north holed through to No. 2 shaft. No. 4 stope north will be finished during the coming fortnight. South underhand stope advanced 20 feet, lode showing fair gold. Have started to sink winze to connect 40 feet level of No. 1 shaft with 60 feet level of No. 2 shaft; when connected stoping will be proceeded with.—No. 2 shaft, 60 feet level. North drive on lode advanced 4 feet, total from shaft 7 feet. Lode 2 inches to 10 inches wide, estimated yield 1 ounce gold per ton. South drive advanced 13 feet, total from shaft 17 feet. Lode again broken up and shows gold.

**No. 7 NORTH-EAST QUEEN.**—The following fortnightly report has been received dated Charters Towers, May 22: I beg to report that the timber required in the No. 1 western level has been put in, and that is now secure. On the 15th inst. Ferguson and party cleaned up a crushing of 13 tons for a return of 12 ounces 3 dwts. 17 grains smelted gold. They are now driving to hole through into the rise put up from No. 3 level, and have 2 feet of stone in the face. Penhallwick and party are still stoping at the back of their level on a reef from 1 to 2 feet 6 inches thick of good quality. Mount and party intend crushing about 14 tons during the coming week. They have about 1 foot of stone where they are opening out. Wherry and party are crushing now at the Defiance mill, and will put through about 50 tons, which is expected to go about 2 ounces to the ton. I have let the block of ground above the dam to W. Anderson and party. We have hauled about 75 tons 10 dwts. of stone from the different parties, and baled about the usual quantity of water. I also had to get a short length of 3 inch pipe for the pump, the suction pipe having given out. The pump is now working very well.

**ORIENTAL.**—Mine report for fortnight ending June 13:—Taylor's engine shaft. Since my last report we have completed the cutting of the tank and the cementing of the same, as also that of the guttering around the shaft. In addition, the excavation of the extra ground for shelter for the miners has been finished, and the shaft timbered down as far as it can be safely done. I am also pleased to state the sinking of the shaft has been resumed, and I trust excellent speed will be made with this work henceforth.—Bridge shaft. During the fortnight 6 feet were driven in the 105 feet level south, making a total of 176 feet, and the lode is stronger than when last reported. At this point we communicated with a level north of the shaft sunk south of bridge shaft, the bottom of the 105 feet level coming in on the back of the other one. On communication we released a considerable volume of water, which drowned our donkey pump at the 165 feet level. We have, however, succeeded in recovering it, and the shaft is now in fork. We are now proceeding to clean up the bottom of the shaft, and hope to commence extending the 155 feet levels north and south in the course of a day or two.—Trial shaft. The driving of the levels north and south has been temporarily suspended.

**ROBINSON.**—The directors submit the following general manager's summary of operations of the company for May, together with statement of expenditure and revenue as follows: Mine. Quartz mined, 15,589 tons.—Development. Drives, 712 feet; raises, 367 feet; crosscuts, 67 feet; total, 1146 feet.—Main incline shaft (west). 6th level. Driving west on south reef, 11 feet; driving east and west on south reef, 101 feet.—7th level. Driving east and west on south reef, 39 feet; raise, 34 feet; crosscut, 35 feet.—8th level. Driving west on main reef, 69 feet; driving west on south reef, 47 feet; raise, 57 feet.—9th level. Driving east and west on south reef, 85 feet; raises, 94 feet.—10th level. Driving east on south reef, 33 feet; raise, 35 feet.—Main incline shaft (east). 5th level. Driving east on main reef leader, 18 feet; driving east on south reef, 21 feet; crosscut, 8 feet.—6th level. Driving east on main reef leader, 26 feet; driving west on south reef, 23 feet; raise, 33 feet; crosscut, 10 feet.—7th level. Driving west on main reef leader, 41 feet; driving west on south reef, 38 feet.—8th level. Driving east and west on south reef, 79 feet; crosscut, 14 feet.—9th level. Driving east on main reef, 50 feet; raises, 79 feet.—10th level. Driving west on main reef leader, 41 feet; raise, 35 feet; total, 1146 feet.—Mill. Stamps at work 120, nett running time 28½ days, tons crushed 15,589 tons, tons per stamp per diem 4½ tons; gold won from above, 12,489 ounces 15 dwts.—Chlorination and cyanide works. Gold won from our own concentrates (by chlorination), 730 ounces; bullion from tailings (cyanide process), 2245 ounces 2 dwts.; bullion from slimes, Rand Central O.R. Company (Limited), 1584 ounces 14 dwts.; from own ore, £17,049 ounces 11 dwts.; gold from concentrates purchased (by chlorination), 2283 ounces 5 dwts.; total, 19,332 ounces 16 dwts.

#### EXPENDITURE AND REVENUE.

Crushed 15,589 tons.		Working expenditure.		Cost per ton:	
Mining account (including mine maintenance) ...	£8,843 7 1	...	£0 11 4 14		
Milling account (including mill maintenance) ...	2,461 7 1	...	0 3 1 39		
General maintenance account ...	279 0 1	...	0 0 4 30		
General charges ...	2,102 12 8	...	0 2 8 37		
	£13,686 6 11	...	£0 17 6 70		
Expenditure on mine development, (including main shafts) ...	3,427 1 10	...	0 4 4 76		
Do on machinery, plant, and buildings ...	4,285 18 4	...	0 5 5 99		
	£21,399 7 1	...	£1 7 5 45		
Retirement account:—					
Working expenses at cyanide and chlorination works ...	2,603 3 9				
Cost of concentrates purchased (including receiving) ...	8,108 11 6				
				£32,111 2 4	
Profit for month ...				85,240 10 11	
				£67,351 13 3	
REVENUE.					
Gold account (mill), 12,489 ounces 15 dwts. ...	£45,016 13 0				
Sandry revenue ...	180 0 0				
				£45,196 13 0	
Slimes plant account:—					
6623 tons delivered ...	£1,388 11 5				
Company's share of profits on working ...	290 0 0				
				1,671 11 5	
Retirement account:—					
Gold account (tailings), 2245 ounces 2 dwts. ...	£7,278 6 0				
Gold account (own and purchased concentrates), 3013 ounces 5 dwts. ...	12,392 0 0				
				19,670 6 0	
Pins amount received in excess of book entry for March gold ...				806 2 10	
				£67,351 13 3	
WESTRALIAN PREMIER.—Professor Wm. Nicholas writes, under date May 27: That gold is still being found in the levels in several places, and that the mine is getting well opened up.					



**BAYLEY'S REWARD No. 1 SOUTH.**—Mining report, dated Coolgardie, May 11:—I beg to report for the fortnight ending 9th inst.:—Main shaft. The contractors for sinking the shaft have now got fairly to work, and are making good headway.—170 feet level. The stopes north of rise at back of this level continue to yield average grade stone, though no gold is visible. Reef about 4 feet wide.—Intermediate level (145 feet). The winze being sunk from the bottom of this level has been carried down a further depth of 11 feet during the fortnight. There yet remain about 4 feet of sinking to be done to connect with back of 170 feet level.—120 feet level. Winze north of shaft has been sunk 7 feet, total 31 feet. Have started to drive north from the bottom of winze, and the lode here is 2 feet wide. The south drive now measures 52 feet, having been extended 5 feet.—90 feet level. The crosscut south of prospecting shaft has been driven east 26 feet, total 74 feet. During the past week a decided change has taken place, and the face now looks very promising. The drive going west from prospecting shaft has been advanced 11 feet without change.—Shaft north of main shaft. This shaft is now 38 feet deep, having been sunk 30 feet. Will require to go about 12 feet deeper before being able to work old backs from No. 1 or 90 feet level.—Stone crashed. During the fortnight 140 tons of stone have been treated, the yield being 110 ounces.—(Signed) Tom V. Browne, manager.

**CLUTHA GOLD MINES.**—The manager reports, under date June 10, as follows:—C winze, measurement at date 59 feet, work done for week 4 feet. On footwall of shaft there is a seam which gives a small point of gold in panning, but as I have not yet broken the face I cannot say what is inside. I expect to be able to break into it in a few days. My reason for not breaking the face of rock is that I should not put the shaft out of working order for the skid way, and this winze has to go to a depth of 120 feet on the incline. The rock that I can see on the face is very promising.—20 feet level. Measurement at date 95 feet, work done for the week 7 feet. There have been at various times patches of visible gold showing amongst the rock all this week. The width of reef in face of drive is 5 feet of very good rock, and the reef extends further into the footwall side, carrying gold, which I have proved by bore holes. I do not intend breaking further into the reef until the drive is extended to about 25 feet more. Average panning for week, 8 dwts, 9 grains.—100 feet level west. Measurement at date 113 feet, work done for week 3 feet. The rock is beginning to look very promising for carrying good gold. Average panning: 1 dwt, 12 grains. The 200 level is looking well, and the rock is all reef matter. I have never seen the mine looking better.—(Signed) R. Ross, manager.

**GRAVEN'S CALEDONIA.**—The following fortnightly report has been received from the mine, dated Charters Towers, May 21:—In the underhand stope from No. 8 level the reef averages 7 inches in thickness. No. 7 level on the hanging wall reef has been extended a further distance of 7 feet, making a total of 68 feet from starting point. The reef in this level averages about 5 inches of good quality stone. In the eight stopes over this level the reef averages from 5 to 12 inches in thickness of poor quality stone. The haulage of quartz for the company for this fortnight is 46 tons, making a total of 110 tons in the paddock. Hooper and party in No. 6 level have got about 14 tons of stone broken. Daddow and party in the 5th level have got about 10 tons of stone broken. Gibbon and party working on the Victoria reef, and this reef averages from 6 inches to 2 feet in thickness.

**COLUMBIA (Charters Towers).**—The mine manager reports as follows for the fortnight ending May 20: The contractor has sunk the shaft an additional 31 feet, making the total depth 275 feet. The country passed through has been very much broken up requiring close timbering. The concrete foundation for the winding engine is now nearly finished. The air-compressor has been delivered on the ground, and fair progress is being made with the foundations for the same. Tenders have been called for the erection of the poppet legs and brace, which work will be proceeded with at an early date.

**CONFEDERATE SYNDICATE.**—Manager's report for the fortnight ending May 23: Since last report have driven main tunnel 4 feet. Have driven 7 feet into the wash, and driven 78 feet east and west on it. Have about 4 feet of wash, carrying a little gold. Holed through to the top tunnel going west. Air is now good and can get on quicker with the main tunnel. Do not think we are far from getting, judging by the way the bottom dips in the eastern drive.

**GOLD FIELDS OF MYSORE.**—Mining report for fortnight ending June 16:—South shaft. The total depth of this shaft below the 470 feet level is 96 feet, of which 64 feet were sunk in the last fortnight. In the north end of the shaft the quartz is 18 inches wide, and in the south end 2 feet; the sample taken from it yielding 5 dwts. of gold per ton. The rock beneath the lode is rather harder than it was. In the crosscut west from the 380 feet level north 13 feet were driven, making its total length 237 feet, but there is no change to report. The lode in the 380 feet level south of the crosscut west is 4 feet wide, carrying stringers of quartz, assaying a trace of gold. In the two weeks 15½ feet were driven, total 62 feet. The crosscut west at the 380 feet level south was extended 12 feet 3 inches, making a total of 52 feet without any change occurring in the nature of the ground. Although it carries no quartz the lode in 470 feet level north is 18 inches wide, and yields 1 dwt. 7 grains of gold per ton on assay. In the two weeks 21 feet were driven, and the level is now 328 feet long. The total length of the 470 feet level south is 223 feet, showing an advance of 18 feet for the fortnight, composed of quartz. The lode is 4 feet wide, with an assay value of 9 dwts, 19 grains of gold per ton. In the rise in the back of this level we rose 9 feet, making the total 53 feet. The lode is 3½ feet wide, all quartz, assaying 7 dwts, 20 grains per ton.—Stopes: Back of the 280 feet level south, quartz 3 feet wide, yielding 2 dwts, 15 grains of gold per ton. Back of the 380 feet level north, quartz 5 feet wide, assaying 3 dwts, 22 grains of gold per ton. Back of the 380 feet level south, quartz 18 inches wide, assays 7 dwts, 4 grains per ton.—Winze. Sinking below the 380 feet level south sunk 7 feet. Lode 5½ feet wide, assay value 4 dwts, per ton.—Middle shaft. We are still engaged cutting down the side of the shaft below the 280 feet level.—Prospecting shaft. Nothing new has been met with in the crosscut east, where 2½ feet were driven, making a total of 55½ feet.—Ajjapallie. This shaft is still all in lode matter, yielding 1 dwt, 23 grains of gold per ton. Its depth is now 116 feet, of which 5 feet have been sunk since the last report. No. 1 trial pit north-east of this shaft is 40 feet deep, and carries small veins of quartz 3 or 4 inches wide. No. 2 trial pit, being in close proximity to No. 1, was suspended at a depth of 35 feet.—Cyanide works. Scarcely any progress is being made in this department, owing to the absence of the men usually employed here.

**GOLD ESTATES.**—Extract from letter from manager of Menzies:—Aurelia. In the 126 feet level north (south shaft) the vein still continues about 5 feet wide. This level is now extended 9 feet from shaft. I have driven 5 feet in the south drive, which makes that level 20 feet from shaft. There is a hanging wall streak 3 inches wide and a footwall streak 6 inches wide. For the week I have sunk 12 feet in No. 1 shaft on Aspasia line of lode. This shaft is now 76 feet deep. No. 2 shaft is 78 feet deep, and at the bottom the hanging and footwalls are getting very scaly and require timbering before we can go any deeper. I shall run a level out south about 76 feet from surface. The reef at this point is 2 feet thick, and averages 2 ounces 5 dwts. to the ton. There are several tons of good stone on the dump for the mill.—Etrenna. I am making fair progress in sinking No. 1 shaft west, which I intend to put down as a deep shaft for the purpose of cutting the Orasoe vein in depth as well as opening up reefs which outcrop in this lease. The progress in sinking for the week is 6 feet, making a total depth of 17 feet.—Cleone. No. 1 or perpendicular shaft is being sunk as fast as possible, total depth of shaft 28 feet. The ground is favourable for sinking.

**HARMONY GOLD AND LAND.**—The company's mining manager on the Murchison range reports by cable of July 6 that he is advancing his drive in the lower adit at Mashambane Hill, but that although he has driven a distance of 35 feet he is not yet through the reef. The company's acting manager at Pietersburg writes under date June 12:—The farm is looking very well, and the crops are progressing most favourably, and there is every reason

to expect a valuable return. Forage is now very dear—£5 per 100 bundles. Within the next two months we shall have 20,000 bundles of our early forage ready, and other crops to follow later. The vines and fruit trees are looking well. We have 30,000 of the former, and 1000 of the latter. Notwithstanding the severe drought, we have saved about 30,000 blue gum trees, which since the late beneficial rains are looking very well, and average 5 feet to 6 feet in height, and should make a really fine show this time next year. Wherever we bore there is water all over the farm. I am sinking a well just above the new vines. It is only down 13 feet, and I am getting an abundance of water already. This means that the whole of the stretch to the Sand River can be put under irrigation, and the cost will be practically nothing. Before the railway comes on the farm you have a most valuable estate both for building purposes and for agriculture. Property here is every day advancing in value, as we expect the railway engineers to commence operations at our end of the line almost immediately.

**OORRIGUM.**—Superintendent's report for fortnight ending June 15: Taylor's shaft sunk 3 feet, depth below the 960 feet level 37 feet. The lode matrix shows no improvement, chiefly schist, intermixed with stringers of quartz and pyrites. The sinking of shaft was suspended one week, and the Italians and coolies put to assist timbermen in securing the hanging wall, which has become broken and unsafe for working. The crosscut east 960 feet level south extended 10 feet. No discovery; therefore suspended, and the men put to resume the 960 feet level south, which has been driven 11 feet 6 inches, total distance 71 feet 6 inches. The reef is very small. The 860 feet level south driven 22 feet 6 inches, total 347 feet. Lode 2 feet wide, assay value 3 ounces 14 dwts, 1 grain. The 860 feet level north driven 3 feet, total 156 feet, which has been communicated with the 860 feet level south from Wallroth's shaft. Level north from No. 4 rise back of 280 feet level south driven 7 feet, total 187 feet 6 inches. This has communicated with the old workings from surface. Wallroth's shaft sunk 4 feet 6 inches, total 1223 feet 3 inches. No change in character of strata, and the lode continues small. The 1080 feet level south driven 18 feet 9 inches, total 372 feet 9 inches. Lode 10 inches wide, assay value 8 dwts, 17 grains. The 1070 feet level north driven 9 feet 3 inches, total 276 feet 6 inches. Lode 3 inches wide, assay value 3 dwts, 6 grains. The 960 feet level north driven 4 feet, total 231 feet 6 inches. Lode 3 inches wide, assay value 5 dwts, 10 grains. The 760 feet level north driven 3 feet, total 513 feet 6 inches. Lode 4 inches wide, assay value 4 dwts, 8 grains. No. 3 winze 760 feet level north sunk 2 feet 6 inches, total 16 feet 9 inches. Lode 1 foot wide, assay value 7 dwts, 15 grains. The 460 feet level north driven 3 feet, total 392 feet. Lode pinched. No sample. No. 2 winze 460 feet level north sunk 2 feet 6 inches, total 50 feet 6 inches. Lode 2 feet wide, assay value 2 ounces 3 dwts, 13 grains. The 215 feet level south driven 32 feet, total 422 feet. Lode 8 inches wide, composed of soft schist with a little quartz interspersed. No sample taken. Level north from crosscut east 215 feet level north driven on branch referred to in last report 10 feet 3 inches. Lode 9 inches wide, assay value 9 dwts, 19 grains. Low's shaft sunk 4 feet 3 inches, total depth 852 feet 7 inches. The 810 feet level south from point of intersection driven 17 feet 3 inches, total 213 feet 3 inches. Lode 6 inches wide, assay value 5 dwts, 10 grains. No. 2 winze 810 feet level south from point of intersection sunk 2 feet, total 4 feet 6 inches. Lode 6 inches wide, assay value 4 dwts, 8 grains. The 810 feet level north from point of intersection driven 10 feet 3 inches, total 121 feet 6 inches, still in dyke. The 710 feet level south driven 8 feet 6 inches, total 373 feet 6 inches. Lode 6 inches wide, assay value 3 dwts, 6 grains. No. 3 winze 710 feet level south sunk 3 feet 9 inches, total 7 feet 9 inches. Lode 3 feet wide, assay value 7 dwts, 15 grains. No. 1 winze 710 feet level south driven north on lode from point of intersection sunk 1 foot, total 81 feet 3 inches. Lode 2 feet wide, assay value 5 dwts, 10 grains. No. 2 winze 810 feet level south sunk 1 foot 6 inches, total 34 feet 9 inches. Lode 1 foot wide, assay value 1 ounce 3 dwts, 22 grains.—Probyn's shaft. The 1150 feet level north driven 1 foot, total 129 feet. Lode pinched. The 1050 feet level south driven 6 feet, total 194 feet. Lode pinched. The 950 feet level south driven 4 feet, total 383 feet. Lode pinched. Throughout the mine 30 stopes have been worked on full time since the last report, and a few others have been partly wrought on, all of which have yielded quartz of the average quality.—Health. The health of the camp during the past fortnight has been bad. The prevalence of sickness amongst the natives, and their consequent departure to their villages, having made it very difficult for us to keep the work going in even a desultory fashion. During the month of May we crashed 5012 tons of quartz, which produced 5051 ounces of gold. In addition to this 5081 tons of tailings were treated, which yielded 978 ounces of gold, total return 6029 ounces of gold.

**VICTORY (Charters Towers).**—Mining manager's report for fortnight ending May 17: No. 2 shaft. The 320 feet level has been driven west a further 11 feet, making the present length of this drive from shaft 365 feet. We are still driving through the same sort of country. There is no change. No. 7 level has been driven 7 feet for the fortnight, total length of drive up to date 337 feet. The country keeps hard, but is full of heads and floors.—No. 1 A. The reef in the stopes will average 10 inches. I do not think the quality is quite up to the last that was crashed from this place, the stone is whiter and not carrying so much mineral.—No. 3 shaft. The underlie has been sunk a further 15 feet; present depth from straight shaft 270 feet. The formation in the bottom is 14 feet between the walls, with 3 or 4 inches of stone on footwall, and the same on hanging wall, medium quality. On the 13th of the month started putting in timber at 210 feet from straight for opening out levels; since then have driven 4 feet each way on the east side: there is 12 inches of reef on hanging wall and 3 inches on footwall. The walls here are 8 feet apart. On west side there is no stone on hanging wall, about 4 inches on the footwall; the quality is about the average of what has been raised from this shaft. I started two men stoping above No. 1 east; the reef here will average 12 inches; some very fair stone amongst it; some of it very white and poor, and carrying very little mineral. I intend pushing No. 2 east into boundary for ventilation, for the smoke is a great drawback to us at present. There has been hauled from No. 3 shaft 20 tons, total in copper 61 tons. From No. 3 shaft 17 tons have been hauled, making 40 tons at face at this shaft.

**WESTLEIGH.**—Extract from manager's report dated Klerksdorp, June 10: Mining is making such progress as circumstances will allow, but the west vertical is standing with 60 feet of water in it, owing to the pump having broken down, the repairs necessary are nearly completed, and I expect to commence sinking again by Sunday. The shaft is greatly delayed by small accidents to the pump, such as the splitting of valves, want of packing, &c., which delay the working of the shafts for periods of from two hours to 10 hours, and I think that it would be a great saving in coal and current expenses to put down another pump, which could be used as a reserve when necessary to stop the present one. I would get an Evans vertical sinking pump 6 inch by 3 inch for £50, or thereabouts, and I strongly urge you to give me permission to do this, as although we cannot have many more feet to sink in this particular shaft, we have three other shafts waiting for steam pumps, and it will be an enormous help in them to have two pumps. The reef in the east incline is looking better every day, but it does not increase in value, remaining the same to within a few pennyweights, averaging about 15 dwts. when about 18 inches of the bottom is taken, that lying overhead being of very low grade. The following is the amount of sinking done for the fortnight:—West incline, 20 feet; west incline, east drive, 19 feet; west incline, west drive, 17 feet; west vertical No. 1, 6 feet; east incline, 16 feet; east vertical No. 1, 3 feet; progress total, 81 feet.

**ROYAL SOVEREIGN.**—Under date May 27, the manager reports as follows: Have had samples of ore from the winze assayed by Messrs. Graves, Gifford, and Co., the result being 3 ounces 3 dwts, 11 grains per ton. The formation in this winze at 130 feet is 4 feet thick. Where the rich gold came in it is about 6 to 9 inches, with every appearance of making into one solid body of rich gold bearing stone. The mine is looking well, and I strongly advise making provision for machinery in order to start crushing at an early date, when I am sure the results will be beyond expectations.

## MINING IN NEW ZEALAND.

(FROM OUR OWN CORRESPONDENT.)

### Hauraki Gold Fields.

At the present moment the Auckland Stock Exchange is very busy, due to the extra demand for genuine mining properties by agents sent out to the colony from London. These experts come here with very high credentials, and armed with the power to purchase, in many instances the demands have been fully supplied, and substantial deposits paid. This and the successful flotation of several of our most important mines has been the chief cause of a mild boom in mining shares.

In the columns of *The Mining Journal* we notice with pleasure that a detailed statement of the Minister of Mines for New Zealand has been published, and although it is not altogether fresh matter, it is, nevertheless instructive and interesting to those interested in the welfare of the gold fields of New Zealand. I quite endorse the statements of the Minister as regards our gold fields. I refer to that section of our gold fields where the mines have been in operation for the past 25 years, and during that period large sums have been paid away in dividends to shareholders. In paying any the greater part of their gold production in dividends the majority of the companies made serious mistakes in that respect, inasmuch as they paid away the whole of the proceeds from the gold production, and left absolutely nothing for further developments. This is where the majority of the mining companies have gradually come to grief, and had to ultimately suspend operations for the want of the necessary capital to proceed with the development of their lodes down to a greater depth.

In New Zealand, especially in the North Island, the lode systems have been proved true fissure veins, and carry down strong and defined to the deepest levels. There is no denying the fact as regards their gold-producing qualities; for instance, at the very deepest point reached ore worth 2 ounces to the pound has been obtained. I refer to the Kapanga Gold Company, in the Coromandel district. Then, again, the Old Queen of Beauty, now the property of the Thames Hauraki Gold Fields (Limited) Company. In this mine the lodes proved highly auriferous at depth, whilst the May Queen Company have also turned out a large amount of gold from their deepest level, which is 400 feet down. At that depth the lode series proved strong and defined, about 4 to 5 feet in thickness, carrying ore worth £6 to £8 per ton. These lodes are now awaiting development below this level.

The decomposed andesite, or what is familiarly known as the kindly country, it is pleasing to notice, appears to be widening out as a greater depth is reached, and whilst this class of propylite continues to exist, there is every reason to believe that the gold will also exist at depth. As far as I can judge, and writing from a practicable point of view, I am very hopeful that important discoveries will be made in the deep levels of the Hauraki gold fields.

The Ohinemuri section of this vast field must play a very prominent part in the gold production of this colony in the near future, and this remark applies to this district in particular, where the lodes are of immense size, and proved payable beyond a doubt.

With reference to the important discovery recently brought to light in the Kapanga Company's mine, it may be said that it just comes at the right time, and in the right locality. It gives absolute assurance that the lodes in the Kapanga Mine carry gold at the lowest level—viz., 940 feet below the surface. As the *Auckland Star* Coromandel correspondent says:—A report current that gold had again been struck in the Kapanga shaft is perfectly correct; he says he called on Captain Argall, and that gentleman (who it may be mentioned is the manager) informed him that a lode 9 inches wide had been intersected at a depth of 940 feet, carrying splendid gold. Some pounds of picked stone were selected, several pieces, of which would yield at the rate of 2 ounces to the pound.

The find, the same writer says, is even more important than that recently chronicled, and its value to the Kapanga Company cannot be over-estimated, while the beneficial influence it must exert on the deep level mining on the peninsula is beyond all question. Of course, Coromandel, generally speaking, is looked upon as a patchy district. Still, looking back, it will be found that Coromandel is producing gold for the last 30 years, and if only one-half the number of English companies operating in the district should have the good fortune to meet with a patch similar to that now being operated upon the Hauraki Company's ground, I don't think they will have any room to complain.

At the time of writing there is nothing outside of the Kapanga that has anything of importance to report.

The whole of the companies are pushing on with their shaft sinking, and other exploiting operations are being conducted in various parts of the district without change.

At Kuaotunu, which is the adjacent gold field to Coromandel, a much better feeling exists than heretofore; and, from what I can gather, experts who have arrived from various parts proclaim the district equal to anything they have seen in Africa. I am not prepared to endorse these gentlemen's remarks. I must admit Kuaotunu is steadily coming to the front as a producer of gold; still I am afraid the so-called experts may have been carried away with a few good prospects they saw when travelling through the district.

I am afraid the syndicates of companies who have sent these people here to seek for them will, in some instances, find themselves saddled with untried properties which will eventually prove to them a bitter pill. I don't wish to cast any reflections on the quality of the Kuaotunu, or any other fields, but I cannot allow it to pass without pointing out that experts from afar have not the slightest knowledge of the formation on this peninsula, or the peculiar features which predominate in our ores. We have lodes, and very large lodes, but remember they are mighty poor ones. Some carry good ore on the surface, but fail in that respect at depth, whereas, on the other hand, some of the quartz bodies improve in quality at depth, and, as mentioned in previous comments on this gold field, investors should be careful, and have a thorough trial of the lode before finally completing negotiations. There are some very rich lodes, and some very poor ones, and in view of avoiding a collapse in the direction indicated, it is as well for strange experts to this gold field to acquire the assistance of thorough practical men, who thoroughly understand all the different propylites in the various centres—for instance, the propylite on the Thames is totally different in character to that in the Ohinemuri gold fields. The class of propylite on the Thames that is most congenial for a gold-bearing lode to exist in fails to exist in the Ohinemuri field.

I am merely pointing out these facts to show that a stranger to this country is at sea, and requires the assistance of thorough practical men, whom I may say are few and far between. However, the Great Mercury Mine is again to the front with a good sound return. They treated 300 tons of ore for the highly remunerative yield of 218 ounces of gold. This property is situated in the Kuaotunu district.



At Waihi the Silverton Company's return has come duly to hand, and taking into consideration that all machinery, when new, takes a little time to get into working order, the tonnage of ore treated is quite up to the mark, its quality I referred to some time back as being worth about £3 10s. to £4 per ton; I can see that I was very near the value. However, during the period they were engaged they had only 25 stamps running three weeks, whilst the fourth week found the full complement of 40 stamps running with ease and regularity at the rate of 100 strokes per minute, and reducing at the rate of 250 tons of waste ore per week. They treated 604 tons of ore, which produced 831 ounces of gold, valued at £2077. The estimated gold in zinc slags and solutions is £400. The return represents the ore crushed up to May 9, which was subsequently treated by cyanide process and cleaned up on May 15. Judging by the tonnage of ore which the mill is capable of treating it will be seen that when everything is working steadily they should reduce quite 1000 tons of material each month, which should produce close upon £4000 worth of bullion; say that £2000 of this is profit, and taking into consideration that there is still £10,000 of unexpended capital in hand, and only 60,000 shares in the company, I should imagine the Silverton will be very early on the list of dividend contributors. However, there is apparently abundance of ore awaiting treatment, and other lodes wholly intact and awaiting development.

The Waitekauri Company's new 40 stamp mill should be in readiness by the end of June or the middle of July. Mr. Purchas, the company's manager, deserves praise and commendation for the manner in which he has carried out the various works entrusted to his supervision, especially in the construction of water races, tramways, and the erection of the plant. In every department the work has been pushed ahead, and very shortly we hope to see another important concern turning out and assisting in the smelting of the bullion returns.

At Karangahake the New Zealand Crown Mines have again succeeded in picking up their reef after being faulted a considerable distance on its course. In Mr. G. N. McGruer the company have a thorough capable mining navigator. Throughout the total length of the No. 6 level the lode has been subjected to 12 different heaves, and on each instance, in an opposite direction; this is perhaps the most erratic lode in the up-country fields, still it is exceptionally rich.

The Auckland Star Ohinemuri correspondent writes that where the reef is being underhand stoped it has widened out to 22 feet, and worth from £7 to £10 per ton; he says the manager informed him that they had sufficient reef opened up to keep 40 stamps working for 30 years and without developing any other reefs on the property. I doubt the statement as regards the 30 years; no doubt the mill may be kept continuously employed during that term, but not on payable ore. I must say that I am thoroughly acquainted with this property, having owned the whole of it myself at one time; and I am thoroughly acquainted with the reef, which is, without exception, highly auriferous; but no one can look through the country and see what their development will reveal, and the stamps are the best test, and so long as the returns keep up I think it is sufficient; but to say that there are so many years' work to be seen on profitable ore, I think it is an erroneous view to take, and may be altogether misleading.

The Woodstock Company are pushing on with their reduction plant, and the mine is being thoroughly and systematically developed. During the past week the manager, Mr. John McCombie, telegraphed:—"Through the break to No. 4 level the assay is £25 per ton." This, it must be borne in mind, is not the average value of the lode throughout the mine, as is characteristic on all breaks and faults. The lodes have in the majority of instances proved much richer in quality than what they are 100 feet from the break; generally speaking, some lodes make specimen ore on the faults. However, the Woodstock is opening most satisfactorily, and upon receipt of the above intelligence the shares rose from 28s. to 37s., with buyers at the latter figure, and no sellers under 41s.

The Talisman Company are steadily operating on their material, and the return, when it comes to hand, should be of a highly satisfactory character. The mine looks well, and a low level crosscut has been commenced, with the object of opening up another block for stoping purposes on their reef. At Thames proper the Thames Hauraki Gold Fields Company are vigorously pushing on with the enlargement and stripping of their main shaft. A depth of 110 feet has so far been reached, and I believe it is the intention to proceed almost immediately with the sinking of the No. 2 shaft on the south part of their property. Mr. J. Jenkin Cooper, representing the Cooper Exploration Company, has arrived on the Thames, and is at the present time busy inspecting the Monatairi Gold Company, which was floated in London about the latter part of September; the flotation was due I believe principally to the efforts of the company which Mr. Cooper represents. I hope to have an interview with Mr. Cooper before he returns, but from what I can gather the gentleman referred to is a thorough knowledgeable man. As regards mining, however, he will find that the Monatairi have a number of large low grade ore lodes, which will require treating on a large scale, and I have no doubt if the company move in the direction of erecting additional machinery that they will slowly but surely come to the front as a dividend-payer; of course, it means time and money. The same remark applies to the Thames Hauraki Company; it means a long stretch of time before shareholders will get a return from here, and no doubt some will sicken of the weary wait, but those who will patiently wait will reap the rich reward, for there is gold at the deep levels which requires time and capital to raise it.

THE PEEL PARK GEOLOGICAL COLLECTION, SALFORD.—The geological collection at Peel Park, Salford, which some years ago was withdrawn from public view, has been entirely rearranged and opened for inspection. The process of rearrangement has been carried out by Mr. Herbert Bolton, of the Manchester Museum, Owen's College, who has been occupied in the work for about 1½ years. Mr. Bolton has arranged the minerals according to Dana's system of mineralogy, the rock specimens in accordance with Fletcher's "Guide to the Study of Rocks," and the geological series in accordance with standard authors. He has added one or two special groups, including one representing the structure of coal, and another that of building stone—the latter with a view to show the value of the various kinds of stone used for building purposes in Manchester and Salford. A number of valuable gifts have been made to the Museum by the Clifton and Kersley Coal Company, the Bridgewater Trustees, the Manchester Museum, the British Museum, and the Museum of Science and Art, Edinburgh.

A LITTLE time ago we announced that Mr. O. J. Alford, a member of the eminent firm of Messrs. Bewick, Moreing, and Co., was proceeding to Australasia to examine the different gold fields there, on behalf of a well-known syndicate. Mr. Alford has already accomplished some excellent work, and his commission bids fair to result in great success. To those who wish to communicate with this gentleman, we may state that he can always be heard of at the office of the Brends Exploration Syndicate, Southsea House, Threadneedle-street, London, E.C.

SHEFFIELD TRADE WITH THE UNITED STATES.—The return of the trade of Sheffield with the United States for the quarter ended June 30 shows that the total exports amounted to £181,465, against £124,079 in the same three months of 1895.

## BOARD OF TRADE RETURNS.

### JUNE TABULAR STATEMENT.

Specially compiled for "The Mining Journal" from the Board of Trade Returns.

THE Returns for June, issued on Tuesday, show that the Imports amounted to £25,229,255, an increase of £1,334,571, and the Exports £20,530,053, an increase of £2,729,953 compared with the corresponding month last year. For the six months ended June 30 the Imports were £216,481,035, an increase of £12,793,335, and the Exports £19,002,722, an increase of £1,885,206 compared with the corresponding period 1895. The Exports of Foreign and Colonial Merchandise show a decrease of £256,797, the total for last month being £1,558,378. There is also a decrease on the six months of £292,565, the total being £29,938,789.

#### EXPORTS—SUMMARY OF INCREASES AND DECREASES.

PRINCIPAL AND OTHER ARTICLES	QUANTITIES.		VALUES.	
	INCREASE.	DECREASE.	INCREASE.	DECREASE.
Raw Materials:				
COAL and Patent Fuel ... Tons	187,444	—	44,933	—
COAL, &c., shipped for steamers' use ... Tons	53,358	—	—	—
Metals:				
BRASS, and manufactures of	570	—	7,048	—
COPPER, unwrought and wrought ... Owt.	—	2,949	11,110	—
HARDWARE and cutlery ... £	—	—	41,010	—
IMPLEMENTS and tools, and parts thereof ... £	—	—	23,009	—
IRON, unwrought and wrought ... Tons	85,434	—	53,420	—
LEAD, pig, rolled, &c. ... Tons	—	58	3,947	—
PLATE, and plated gilt wares &c. ... £	—	—	5,313	—
TELEGRAPH WIRE, &c. ... £	—	—	79,892	—
TIN, unwrought ... Owt.	—	803	2,337	—
ZINC or SPelter ... Tons	990	—	15,027	—
OTHER ARTICLES ... £	—	—	742,821	83,487
Total ...	—	—	639,324	—
Machinery:				
Steam engines ...	—	—	126,828	—
Other descriptions ...	—	—	124,324	—
Total ...	—	—	251,152	—
ALKALI ... Owt.	—	61,707	—	19,519
CEMENT ... Tons	—	5,379	—	6,942
PRODUCTS OF COAL ... £	—	—	37,404	—

#### EXPORTS—BRITISH AND IRISH PRODUCE.

PRINCIPAL AND OTHER ARTICLES	QUANTITIES.		VALUES.	
	Month ended June 30.	Month ended June 30.	Month ended June 30.	Month ended June 30.
Metals and Articles Manufactured therefrom (except Machinery):				
BRASS, and Manufactures of, not being Ordnance ...	9,270	9,840	31,479	39,127
COPPER: Unwrought, in Ingots, Cakes, or Slabs, and Precipitate ...	7,692	9,036	15,708	22,049
TO Germany ...	10,070	9,788	22,794	23,843
TO Holland ...	1,423	2,062	3,488	20,214
TO Belgium ...	10,258	5,543	24,127	19,595
TO France ...	2,004	1,009	4,815	2,549
TO British East Indies ...	326	132	890	329
TO Other countries ...	5,871	8,819	13,334	22,176
Total ...	37,104	42,389	84,514	165,055
Wrought, or Manufactures, unenumerated:				
TO Sweden and Norway ...	1,451	2,736	4,069	7,351
TO Germany ...	455	1,598	1,397	4,448
TO Turkey ...	3,575	2,356	9,627	6,558
TO Egypt ...	1,567	783	4,007	2,258
TO Brazil ...	1,466	2,113	4,058	6,284
TO British East Indies ...	3,466	1,825	9,424	5,212
TO Australasia ...	1,450	773	4,470	2,527
TO Other countries ...	5,821	11,674	17,003	33,544
Total ...	19,451	23,358	63,855	69,893
Mixed or Yellow Metal:				
TO China and Hong Kong ...	2,637	787	6,345	1,719
TO British East Indies ...	12,349	1,595	23,086	3,658
TO Other countries ...	6,569	5,432	13,133	13,718
Total ...	20,755	7,814	44,564	19,095
Total of Copper ...	77,510	73,561	182,933	194,043

PRINCIPAL AND OTHER ARTICLES	QUANTITIES.		VALUES.	
	Month ended June 30.	Month ended June 30.	Month ended June 30.	Month ended June 30.
Hardware and Cutlery: Implements and Tools, and parts thereof ...	—	—	142,379	183,389
Iron and Steel: Pig-iron: TO Russia ...	18,697	8,158	54,293	23,100
TO Sweden and Norway ...	5,885	8,198	11,075	17,013
TO Denmark ...	2,730	2,542	5,509	5,178
TO Germany ...	20,943	28,689	50,307	52,618
TO Holland ...	14,696	15,739	31,307	29,691
TO Belgium ...	2,853	5,661	8,596	15,195
TO France ...	1,760	4,718	3,723	12,390
TO Portugal, Azores, and Madeira ...	642	606	1,270	1,343
TO Spain and Canaries ...	266	324	1,348	1,133
TO Italy ...	18,801	16,277	40,234	34,479
TO United States ...	2,174	3,203	14,574	15,348
TO Australasia ...	3,129	4,237	9,687	9,687
TO British North America ...	874	578	2,766	2,086
TO Other countries ...	10,034	16,003	21,490	33,946
Total ...	107,484	111,997	244,827	258,004
Bar, angle, bolt, and rod ...	10,908	14,383	65,963	88,365
Railroad of all sorts ...	40,654	74,556	174,394	359,325
Wire, iron and steel &c. ...	4,706	4,608	65,541	75,032
Hoops, plates, boiler plates, &c. ...	8,829	15,000	18,546	29,618
Galvanised sheets ...	18,624	24,360	168,142	279,618
Cast and wrought iron, &c. ...	23,368	25,309	289,750	451,029
Old, for re-manufacture ...	10,559	18,273	27,256	49,255
Steel, unwrought ...	17,982	22,652	161,815	199,342
Black plates for tinning ...	2,089	3,668	20,359	38,351
Manufactures of steel, or of iron and steel combined ...	2,568	5,622	62,573	88,687
Total of iron and steel (including tin plates and sheets) ...	265,111	350,875	1,827,453	2,360,873
Tin Plates and Sheets:				
TO Russia ...	2,608	1,992	31,330	24,231
TO Germany ...	354	1,400	4,398	16,142
TO Holland ...	245	691	3,233	7,803
TO France ...	876	1,057	10,541	12,534
TO Portugal, Azores, and Madeira ...	437	789	5,235	9,367
TO Italy ...	184	281	2,008	5,169
TO Roumania ...	292	611	4,845	6,960
TO United States ...	13,768	11,753	158,367	137,176
TO Argentina Republic ...	301	718	3,366	7,689
TO British East Indies ...	171	344	2,183	3,892
TO Australasia ...	922	850	10,178	9,459
TO British North America ...	1,582	797	18,464	8,645
TO Other countries ...	971	1,144	10,616	11,435
Total ...	21,119	27,731	23,853	32,437
Total ...	24,900	25,148	288,282	290,099

PRINCIPAL AND OTHER ARTICLES	QUANTITIES.		VALUES.	
	Month ended June 30.	Month ended June 30.	Month ended June 30.	Month ended June 30.
Lead: Pig Sheet, Piping, and Manufactures: TO Russia ...	2,390	2,216	24,569	24,588
TO Germany ...	151	47	1,619	565
TO China and Hong Kong ...	413	210	4,370	2,456
TO Japan ...	314	458	3,826	6,638
TO United States ...	379	7	2,944	135
TO British East Indies ...	596	834	8,909	9,618
TO Australasia ...	267	172	2,764	1,625
TO British North America ...	650	1,278	7,750	15,795
TO Other countries ...	—	—	—	—
Total ...	5,199	5,141	58,374	62,221

#### BRITISH AND IRISH PRODUCE—Continued.

PRINCIPAL AND OTHER ARTICLES	QUANTITIES.		VALUES.	
	Month ended June 30.	Month ended June 30.	Month ended June 30.	Month ended June 30.
Plate and Plated & Gilt Wares: Telegraphic Wires, & apparatus connected therewith ...	—	—	24,229	19,602
Tin, Unwrought:				
TO Russia ...	3,180	1,863	10,531	8,035
TO Sweden and Norway ...	570	1,120	1,852	3,685
TO Germany ...	566	572	1,880	1,792
TO France ...	1,531	1,501	5,402	4,810
TO Turkey ...	454	713	1,603	2,380
TO United States ...	202	203	705	650
TO British North America ...	931	198	3,177	640
TO Other countries ...	2,443	3,104	8,512	10,105
Total ...	8,877	9,274	29,662	30,067

PRINCIPAL AND OTHER ARTICLES	QUANTITIES.		VALUES.	
	Month ended June 30.	Month ended June 30.	Month ended June 30.	Month ended June 30.
Zinc or Spelter: Unwrought and Wrought ...	16,880	17,850	10,446	12,782
Total of Principal Articles ...	—	—	2,313,969	2,958,276
other Articles ...	—	—	69,743	75,770
Total of Metals and Articles Manufactured therefrom (except Machinery) ...	—	—	2,374,712	3,034,046
Alkali ...	430,155	368,448	114,502	94,981
Cement ...	41,703	36,324	67,714	60,772
Products of coal (including paraffin, petroleum, &c.) ...	—	—	112,300	149,710

#### MACHINERY.

PRINCIPAL ARTICLES.	QUANTITIES.		VALUES.	
	Month ended June 30.	Month ended June 30.	Month ended June 30.	Month ended June 30.
Mining: (Not Steam Engines.)				
TO Countries in Europe ...	1,581	2,322	4,433	212,795
TO United States ...	112	150	1,432	1,189
TO Countries in South America ...	1,699	2,614	13,805	19,980
TO British Possessions in S. Africa ...	43,850	46,034	208,162	324,827
TO East Indies ...	3,523	5,739	17,935	24,952
TO Australasia ...	8,283	12,999	34,724	139,453
TO Other Countries ...	4,047	4,717	11,026	24,731
Total ...	63,645	74,575	305,517	546,937
Total of Machinery other than Steam Engines ...	1,094,975	1,199,896	5,889,167	6,855,462
Total of Steam Engines ...	243,465	370,293	1,250,558	1,641,382
Total of Machinery and Mill Work ...	1,338,440	1,570,189	7,139,725	8,496,844

#### EXPORTS OF FOREIGN AND COLONIAL MERCHANDISE.

PRINCIPAL ARTICLES.	QUANTITIES.		VALUES.	
	Month ended June 30.	Month ended June 30.	Month ended June 30.	Month ended June 30.
Copper: Unwrought and part wrought ...	330	1,578	13,939	78,295
Iron and Steel: Bar, angle, bolt, and rod ...	2,358	1,486	16,923	10,635
Steel, unwrought ...	62	424	944	3,933
Manufactures: Girders, beams, and pillars ...	462	17	2,569	156
Unenumerated ...	45,407	81,523	30,788	68,073
Petroleum ...	103,400	1,014,495	3,448	18,949
Quicksilver ...	253,385	768,465	22,912	14,362
Salt-petre ...	2,114	1,395	1,947	1,148
Tin, in blocks, ingots, bars, or slabs ...	27,420	28,766	191,362	162,493

#### SUMMARY OF INCREASES AND DECREASES.

SUMMARY OF INCREASES AND DECREASES.						
PRINCIPAL AND OTHER ARTICLES.			QUANTITIES.		VALUES.	
			Increase.	Decrease.	Increase.	Decrease.
<b>Metals:</b>						
<b>COPPER:</b> Ore ... Tons			—	5,333	18,301	£
Regulus ... ..			—	7,375	—	178,007
Unwrought and part wrought...			283	—	47,406	—
<b>IRON:</b> Ore ... ..			155,794	—	129,925	—
Bar ... ..			785	—	2,876	—
Steel, unwrought ..			685	—	8,716	—
<b>LEAD:</b> Pig and sheet ..			1,582	—	18,661	—
<b>FRUITES</b> of iron or copper ..			—	3,137	—	1,684
<b>QUICKSILVER</b> ... ..			—	366,673	—	35,801
<b>SILVER ORE</b> ... ..			—	—	—	45,780
<b>TIN,</b> in blocks, &c. ...			Owts.	12,083	—	44,131
<b>ZINC,</b> crude ... ..			Tons	62	9,509	—
<b>OTHER ARTICLES</b> ... ..			—	—	8,541	—
					236,035	305,424
					—	236,035
<b>Total</b> ... ..			—	—	—	89,389
<b>Chemicals:</b>						
<b>ALKALI</b> ... ..			Owts.	13,516	—	602
<b>BRIMSTONE</b> ... ..			..	25,013	—	6,074
<b>SALTPETRE</b> ... ..			..	1,852	—	11,424
<b>Iron Manufactures:</b>						
Beams, girders, &c. ...			Tons	83,145	200,842	—
Unenumerated ... ..			Owts.	1,357	2,879	—
<b>ZINC MANUFACTURES</b> ... ..						



## PROVINCIAL SHARE MARKETS.

## THE CORNISH MINE SHARE MARKET.

Mr. MICHAEL WILLIAMS BAWDEN, Mining and Assaying Offices, Liskeard, Cornwall, writes (July 9):—The mining share market is firmer on improvement in copper and tin, but not sufficient to affect prices, which are about the same. Quotations:—Basset United (£1 paid), 18s. 6d. to 20s.; ditto (5s. paid), 4s. 6d. to 5s.; Blue Hills, 1/2 to 1/3; Carn Brea and Tincroft United (10s. paid), 1/2 to 1/3; ditto (2s. 6d. paid), 2s. to 2s. 6d.; Devon Consols, 19s. to 20s.; Dolcoath (£1 paid), 16s. to 17s.; ditto (7s. 6d. paid), 6s. to 6s. 6d.; East Pool, 2 1/2 to 2 3/4; Killifreth (10s. paid), 1/2 to 1/3; Levant, 4 to 4 1/4; Polbarro, 9s. to 10s.; West Kitty, 2 1/2 to 2 3/4; Wheal Grenville, 6 1/2 to 6 3/4; Wheal Kitty, 4s. to 4s. 6s.

Messrs. ARBOTT and WICKETT, Stock and Share Brokers and Mining Share Dealers, Redruth, write under date of July 9:—A quiet market all the week, with a very limited business doing. Dolcoath are well held and enquired for, but at the moment sellers are shy. With a slight move in tin prices would quickly rally. Quotations herewith:—Blue Hills, 1s. to 2s.; Basset Mines, 1/2 to 1; Carn Brea, 1/2 to 1/3; Dolcoath (fully paid), 16s. 6d. to 17s. 6d.; ditto (7s. 6d. paid), 6s. 6d. to 6s. 8d.; East Pool, 2 1/2 to 2 3/4; Killifreth, 6s. to 8s.; Polbarro, 1/2 to 1/3; South Crofty, 1/2 to 1/3; Tincroft, 1/2 to 1/3; West Kitty, 2 1/2 to 2 3/4; Wheal Grenville, 6 1/2 to 6 3/4; Wheal Kitty, 1s. to 2s.; Wheal Metal (3s. paid), 3s. 6d. to 4s.

## MANCHESTER.

Messrs. JOSEPH R. and W. P. BAINES, Stock and Share Brokers, Queen's Chambers, 7, Market Street, write July 9 (noon):—There have been just a few movements of note during the past week, but these may be best reported upon in the daily details. As for home rails, the changes on the week are numerically irregular, but the largest alterations are to be found on the upward side, notwithstanding some distinct declines from best points touched. The cases in which the biggest movements have been made are the "heavy" lines, which, on the announcement of the "splitting" scheme by the Midland Company, rose rapidly, Midland leading the way. As we have said, best points are not maintained, profit-taking and the approach of the settlement for a long account bringing about declines, besides the nominal holiday feeling which begins about now under ordinary circumstances. On the other hand, there are some distinct declines, York A having slipped down about two points yesterday, but not quite at lowest to-day. The results on balance will be seen below. Americans have been to a great extent neglected, but the only changes are on the upward side, whilst at the same time they are small in amount in any case. In Canadiana, Trunks have a similar record to Americans, and the only change in Mexicans is a slight decline in "Mails." Consols are down on the week to the extent of 5-16. Corporation Stocks, &c., contradictory, with moves of 1 per cent. on either side; advances ahead of declines, however. Foreigners little altered, but declines are in a majority, though mainly only in fractions. Bank shares better in all cases where altered. Insurance only fractional changes anywhere, but for the most part they are to lower figures. Changes in other miscellaneous classes well speak for themselves in the details below. Taking now a daily record in rails, Friday last provided a sharp sensation in Midland stock, especially the price improving from 167 at opening to "172 bid," with only a few minutes' interval between the two prices. Other "heavy" lines put on good fair quickly. Americans were quiet but slightly better in tone. Canadians found Trunks firmer on their traffic announcement. Saturday brought in some selling to realise profits on yesterday's advances, and herein "heavy" home rails, in several cases, shed about 1 each of the quick rise. Americans again slightly stronger. Mines, too, showed up better a bit for the active shares. On Monday, in home rails, Westons, Londons, and Berwicks again showed some advance, but the rest of the changes in this department were on the "easy" side. Canadians rather better all round. Americans held up till prices came from the other side, when figures fell away in response to the opening in New York. On Tuesday home rails were again easier, except for Easterns, which marked about 1/2 gain in value. Canadians just about steady. Yankees stood well, and at the close showed some little accession of strength. Yesterday fears of trouble in the coal industry brought home rails flat, the heaviest being affected generally, and Great Northern Deferred in particular. On the other hand, South-Eastern A were exceptional, showing a small advance in price. Nothing of moment in the alterations in Trunks or Americans. The week's traffic showed up fairly well, and for a time mended the market, but this was counteracted by the outlook of the "coal trouble." This morning's opening was much like the close last evening, but Great Northern Deferred opened rather better. Further to-day afterwards.

ENGLISH RAILS.—Higher: Great Western, 1 1/2; Leeds, 3/4 to 3; London and North Western, 3 1/2; Districts, 3 1/2; Midlands, 3 to 3 1/2; Berwicks, 2 1/2; Dover A, 1/2.—Lower: Caledonian, 1/2 to 1; Caledonian Deferred, 1/2; Great Eastern, 1 1/2; York Deferred, 1 1/2; Chathams, 3-16; Saras, 1 1/2; North British, 1 1/2.

CANADIANS AND AMERICANS.—Higher: Atchafalpa, 3/4; ditto Income Bonds, 1/2; Canadian Pacific, 1/2 to 1; Trunk Guaranteed, 1/2; ditto First Preference, 1/2 to 1; ditto Second Preference, 1/2; Central Pacific, 1/2; Milwaukee, 1/2; Denver, 1/2; ditto Preference, 1/2; Louisville, 1/2; New York Central, 1/2; Erie, 1/2; Ontario, 1/2; Norfolk Preference, 1/2.—Lower: Mexican Rails, 1/2.

CONSOLS.—Lower: Two and Three-quarter per Cent., 5-16. COLONIAL STOCKS, &c.—Lower: Victoria Inscribed, 1/2. CORPORATION STOCKS AND DEBENTURES.—Higher: Blackburn Three and a Half per Cent., 1; Nottingham Three per Cent., 1.—Lower: Newcastle Three and a Half per Cent., 1.

FOREIGNERS.—Higher: Italian Renter, 1/2; Spanish Four per Cent., 1/2.—Lower: Brazilian Four and a Half per Cent., 1; Brazilian Four per Cent., 1/2; Portuguese Three per Cent., 1/2; Turks D, 1/2; Uruguay Three and a Half per Cent., 1/2.

BANKS.—Higher: Bank of Bolton, 1/2; London and Midland, 1/2; Mercantile Bank of Lancashire, 1/2; Parr's, 1/2; Union of Manchester, 1/2.

INSURANCE.—Higher: Boiler Inscribed and Steam Power, 1-16 to 3-16; Reliance Marine, 1-16; Union Marine, 1/2.—Lower: Commercial Union, 1/2; Liverpool, London, and Globe, 1/2; Maritime, 1-16; Palatine, 1/2; Royal, 1/2.

COAL, IRON, &c.—Higher: Bolckow £20 paid, 1/2; John Brown's, 1-16 to 3-16.—Lower: Bolckow £12 paid, 1/2; Cammells, 1; Ebbw Vale, 1/2.

TELEGRAPHS AND TELEPHONES.—Higher: Anglo-American, 1; ditto Preference, 1/2.—Lower: National Telephone, 1-16.

BREWERS.—Higher: Bent's, 1/2; Boddington's, 1/2; Showell's, 1/2.—Lower: Chester's, 1/2; Guinness, 20; Massey's, 1/2 to 1.

MISCELLANEOUS.—Higher: Tower Ordinary, 1/2; Bryant and May, 1/2; Howard and Ballough, 1/2 to 1; Kellner Partingtons, 1-16; Manchester Corn Exchange, 1/2 to 1; Palaces, 6d. to 1s.; Pacific Steam, 1/2; Salt Union, 1/2; Gas Light A, 2; Imperial Continental Gas, 1; Suez Canal, 2.—Lower: Chadwick's, 1/2 to 1; Coat's, 7; Eastmans, 1/2; Henry's, 1-16.

LATER (4 p.m.)—Markets (as regards rails) easier all round to-day, declines ranging from 1/4 to 1 at the finish.

## SCOTCH MINING AND INDUSTRIAL COMPANIES SHARE MARKETS.

STIRLING.—Mr. J. GRANT MACLEAN, Stockbroker and Ironbroker (July 9), writes:—During the past week the market has been quiet, probably due to the season of the year. The issue of favourable grade returns has not stimulated transactions, but the outlook, with heap money and settled foreign politics, seems favourable. In shares of coal, iron, and steel companies prices are generally firmer owing to the unsettled state of affairs between the coal-owners and men. Steel Company of Scotland B Debentures offered.

Ebbw Vale are at 5, Marbella 39s., Niddrie 38s. 6d., Wilsons and Clyde New 5 1/2.

In shares of copper concerns there has not been much business doing. Arizona declined to 59s., but the dividend is announced at 1s. 6d. per share. Rio Tinto advanced to 24 1/2, and Tharsis to 119s., but are both now lower. Masons are at 66s.

In shares of gold and silver mines a fair amount of business has been done. The principal transactions have been in Chartered, which advanced to over 70s. on rumors that the board of directors was to be increased, and the issue of debentures successfully effected. The price has since, however, dwindled back to about 61s. owing to the continuance of the rebellion. The Oceana Company proposes to amalgamate with the Africana and Austral-African. The Big Blow Company is to be reconstructed in £1 shares, 17s. paid. Hainault advanced to 80s. on the announcement they had struck the Great Boulder lode, and are now about 71s. 3d. Mysore and Nundydroog have improved on the good crushing returns for last month. Africana are at 35s.; African Consolidated, 1s. 9d.; African Recovery, 35s.; African Estates, 44s. 6d.; Barrett's, 15s. 6d.; Brownhill Proprietary, 13s.; Bonnie Dundee, 8s.; Balkia Land, 6s. 3d.; Cripple Creek Pioneer, 47s. 6d.; Caratal, 8d.; Croydon Consols, 5s.; East Rand Gold and Coal, 22s. 6d.; Eastleigh Deep, 8s.; Emma, 2s.; Gold Creek, 5s. 6d.; Graskop, 5s. 9d.; Hannan's Golden Group, 28s. 9d.; Hannan's Golden Treasure, 28s. 9d.; Hauraki Associated, 5s. 9d.; Hit or Miss, 43s. 9d.; Kathleen, 5s.; Kanowna, 12s. 6d.; Klerkadorp, 5s.; Liebon Berlyn, 7s. 3d.; Murchison Gift, 1s. 6d.; Mashonaland Agency, 42s. 6d.; Murchison New Gift, 5s. 6d.; Mount Charlotte, 35s.; North Boulder, 31s. 3d.; New Queen, 6s.; New Steyn, 36s. 3d.; Otto's Kopje, 6d.; Poorman, 9d.; Princess Royal, 8s.; Paddington, 38s. 9d.; Rand Rhodesia, 18s.; Rand Roodepoort, 5s. 6d.; Sam's Wealth of Nations, 7s.; Springdale, 1s. 3d.; Sheba Queen, 6s. 3d.; Sherlaw's, 12s.; Sutherland, 2s. 3d.; Taitapo, 70s.; Triumph, N.Z., 4s. 9d.; United Rhodesia, 15s. 6d.; Violet, 25s.; Waterfall Estates, 16s. 3d.; and Woodstock Transvaal, 32s.

In shares of miscellaneous companies prices are steady. Oil companies shares are firmer on the announcement that the Scotch companies have renewed their mutual working agreement. Young's Paraffin exceptionally lower on proposals to convert and consolidate their existing Termination Debenture debt and Convertible Debenture stock. Glenboig Fire Clay are at 7 1/2, Lawes' Chemical, 5 1/2, and Nobel Dynamite 16 1/2.

## EDINBURGH.

Messrs. THOMAS MILLER and SONS, Stock and Share Brokers, 69, Hanover Street, Edinburgh, report as follows under date of July 9:—Since last weekly report Glasgow and South Western Railway Ordinary has risen from 137 to 139 1/2. North British has been affected by the movement among some sections of the workmen for shorter hours, and has declined from 51 to 50. Caledonian Deferred has also declined from 62 1/2 to 61 7-16. In insurance shares Caledonian have risen from 29 1/2 to 29 3/4, Scottish Metropolitan Life from 41s. 6d. to 43s., while English and Scottish Law Life have fallen from 12 3-16 to 12 1/2, and National Guarantee from 69s. to 65s. Bank Stocks have shown renewed strength. British Linen has advanced from 438 to 442, Commercial from 77 to 78, National from 353 to 365, Royal from 234 to 240. Clydesdale have receded from 21 1/2 to 21 1/4. A good business has been done in British South Africa shares, which have fluctuated freely; the price is now at 61s. 6d., as compared with 59s. a week ago. Steel Company of Scotland shares have changed from 5 1/2 to 9 3/4, Arizona Copper from 62s. to 60s. 6d., Rio Tinto from 24 1/2 to 24, Tharsis from £5 16s. to £5 7s. 8d., Broken Hill from 48s. 6d. to 50s., Consolidated Gold Fields from 12 7-16 to 12 1/2. J. and P. Coats have declined from 64 1/2 to 59.

## MINING IN CORNWALL

AND DEVON:  
NOTES ON MINING IN THE WEST.

(FROM OUR OWN CORRESPONDENT.)

Those who prophecy good things concerning the Cornish mining industry have received an important addition to their ranks in the person of Mr. Martin, the Government Inspector of Mines for the district. He is of opinion that the bottom has been reached, and that "a cheery view may begin to be taken of the tin market, and of Cornish mining." He sees no reason to think that there are not as rich discoveries to be made in Cornwall in the future as there have been in the past; and believes that good opportunities may be found for remunerative investment of capital in mines in Cornwall under enlightened advice and management. So decided an expression of opinion from so high an authority ought to have a beneficial effect. If further evidence is required of the faith which people still have in Cornish mining when properly conducted, it may be found in the response which has been made to the appeal of the directors of Carn Brea and Tincroft for support in the reconstruction of that company. Carn Brea has made so heavy a pull on the old shareholders that there were forebodings in some quarters as to the extent to which they would be likely to place fresh capital in the concern. When the limited scheme was first mooted, £75,000 was mentioned as a fair working capital, especially in view of the fact that the mines are splendidly equipped with up-to-date machinery, at any rate, so far as pumping and rock drilling plant are concerned. The directors found at their recent meeting that applications had been received for new shares representing the amount of capital required, and they think they can see their way to the amount which is still needed. So satisfied were they with the response, that they have decided to at once proceed to allotment. This is now one of the most important mining properties in the county, and must rank second only to Dolcoath. The directors will at once enter on a most vigorous policy of development, and considering the enormous area of the sett, the large number of points in operation, and the past history of both mines, it would be surprising if rich branches similar to those which have materially increased the fortunes of the older shareholders are not again discovered. Satisfaction is generally expressed at the fact that the services of both Captain Teague and Captain White have been retained, but in the curtailment of establishment changes which were bound to follow on amalgamation, Captains Daddow and Penhall have had to sever their connection with the mines.

The production of arsenic in the two Western Counties is receiving rather more attention just now than it has done for some time, as a result of the good price which is being realised. Although most of the mines have been returning more or less of the mineral as a by-product, those which have good quantities of mundie in their upper levels are finding that it is a very useful second string while tin remains at the present low price. There is even talk of opening one or two of the old copper mines with a view to working them for arsenic, but none of these projects have yet taken definite shape in Cornwall. There are very large quantities of mundie lying about in the old "burrows," and within the past few months several of these have been picked over, and have made very fair returns to the men for their labour. We should imagine there is a very fair field here for those miners who still remain unemployed, and the removal of these old burrows would not unlikely prove quite as useful as some of the relief works which have been undertaken, and certainly more congenial to the men employed.

## INDIAN MINES' OUTPUT FOR JUNE.

DURING last month the output of the mines in Mysore was 25,751 ounces, showing a decrease\* of 1089 ounces as compared with the preceding month, and an increase of 4912 ounces as compared with the corresponding month of 1895. The production in ounces since the beginning of 1892 has been as follows:—

	1892.	1893.	1894.	1895.	1896.
January ...	11,674	16,844	17,026	19,673	29,986
February ...	11,780	16,656	15,803	19,358	27,418
March ...	11,579	17,463	16,080	20,257	26,171
April ...	11,813	18,287	15,551	20,399	26,866
May ...	12,488	17,922	16,543	20,797	29,840
June ...	11,847	16,879	15,459	20,839	25,751
July ...	13,277	16,676	18,271	19,280	—
August ...	14,854	16,692	19,073	20,704	—
September ...	5,529	17,060	18,911	21,502	—
October ...	15,922	17,440	19,119	22,301	—
November ...	15,942	17,557	18,825	22,545	—
December ...	16,435	17,659	19,068	22,652	—

Total ... 163,140 ... 207,135 ... 209,729 ... 250,306 ... 163,032  
\* Decrease owing to cholera.

The outputs in ounces of the individual mines for the past six months have been:—

	Jan.	Feb.	Mar.	Apr.	May.	June.
Ooregum ...	6,180	6,170	6,057	6,119	6,029	5,332
Mysore ...	13,349	10,145	8,934	8,969	8,845	8,955
Champion Reef ...	6,291	6,304	6,503	6,643	6,739	6,433
Nundydroog ...	3,323	3,781	3,550	3,563	3,571	3,589
Coromandel ...	—	—	—	452	680	620
Nine Reefs ...	—	—	—	—	—	—
Mysore Reefs ...	179	153	114	81	102	9
Mysore W. and Wynaad ...	544	654	701	703	706	422
Balaghat ...	120	211	312	336	268	306

Total ... 29,986 ... 27,418 ... 26,171 ... 26,866 ... 26,840 ... 25,751  
a Including tailings held over (7000 ounces.)  
\* Of this 2850 ounces are the January balance.  
† 250 ounces from the previous clean up are being forwarded.

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## METAL CIRCULARS.

**MESSERS. JAMES LEWIS AND SONS' Monthly Report on Ores and Metals.** dated Liverpool, July 11, 1896.—Copper. The cash price of good merchantable copper fluctuated between £17 2s. 6d. and £18 1s. 3d. up to the 11th ult., but with purchases of about 3300 tons on the 12th advanced to £18 17s. 6d., and of a similar quantity on the 15th to £20 7s. 6d. per ton, followed by a reaction, on realisation of profits, to £18 12s. 6d. on the 17th. By the 19th values recovered to £19, and sales of about 7000 tons were made between £20 1s. 3d. and £21 7s. 6d. in the course of the week, which closed with buyers at £21 10s. "Bear" selling has since forced prices down to £18 15s., but the closing value is £19 3s. 9d. for cash, and £18 7s. 6d. for three months' prompt. Sales of six months' prompt have been made at £19 7s. 6d., and of 12 months' prompt at £19 15s. 9d. At times cash has realised as much as three months' prompt. The firm who have recently bought so largely have quietly continued their purchases whenever they could do so at cheap rates, and must now have the control of a quantity approximating 20,000 tons. The total stock of Chili bars, which practically means that of G.M. copper in England, now amounts to only 25,527 tons. Stock taking has somewhat diminished deliveries, the decrease in English and French stocks for the month being 1021 tons. From 41,521 tons on January 1 the public stocks in England have diminished during the half-year to 28,393 tons, or 13,128 tons, while during the past 12 months the diminution amounts to 24,058 tons. There must also have been a considerable reduction in the quantity at the works of smelters and manufacturers. The branches of trade which consume copper continue very active, shipbuilders, locomotive engineers, dynamo makers, and wire drawers being especially busy. The New York quotation for Lake copper has declined the last few days from 1.75 to 1.55 cents per lb., or to £35 per ton less 2 1/2 per cent. c.i.f. without commission, equal to £58 10s. per ton unit Birmingham terms. American shipments to Europe for the past month amount to 9754 tons against 10,481 tons in May. They are expected to fall off still further in view of increased home consumption. Imports are 4839 tons, and deliveries 19,944 tons, greater to date than during the same period last year. The total arrivals in England and France for the month have been 8211 tons, and the deliveries 9231 tons fine. Stocks have decreased 1021 tons, and the visible supply 613 tons. The arrivals in England from Chili during the month have been 1305, and the deliveries 2160 tons, and from other countries 3035 and 3243 tons fine respectively. The arrival here and in Swansea from the United States have been 850 tons bar, 377 tons ingots, and 1195 tons matte, equal to about 1864 tons fine copper, in London 408 and in France 1460 tons fine. The Chili charters for the month are advised as 2150 tons, and exchange 17 1/4. Quotations to-day are:—Chili bars and good merchantable copper £21 3s. 9d. for cash, and £19 7s. 6d. for three months' prompt, buyers. English best selected ingots £53 10s. to £54 10s. and tough cake £53 to £54 per ton, 9s. 7 1/2d. for ore of 20 per cent., and 9s. 10 1/2d. per unit for Chili regulus or American matte, free from silver. Chili exports to June 30, 1896.

	1891.	1892.	1893.	1894.	1895.	1896.
Tons	Tons	Tons	Tons	Tons	Tons	Tons
Exported to April 30	6513	6817	5997	6331	7252	8117
Loading on	...	...	...	...	...	...
Chart red to June 30	2637	3993	3803	4618	4361	3950

Gold, 77s. 9 1/2d. per ounce standard. Silver advanced from 31 1/4d. on the 3rd to 31 3/4d. on the 25th ult., closing at 31 3/4d. per ounce standard. Quicksilver from second hands is quoted at £3 9s. per bottle. Sulphate of copper is lower at £16 15s. to £17 per ton for prompt delivery and forward delivery. Lead £11 5s. per ton for English; soft Spanish £11 2s. 6d.; rich in silver £11 7s. 6d.; ore of 70 per cent. £14 15s. 6d. per ton and fine silver value. Antimony quiet at £50 per ton. Nickel offer at 1s. 1d. to 1s. 2d. per lb. net. Tin advanced to £81 15s. on the 16th ult., closing at £81 2s. 6d. per ton. Bank rate of discount remains at 1 per cent.

**Messrs. HARRINGTON and Co's. Copper Report,** dated Liverpool, July 1, says:—Chili Charted for the second half of June are advised as 650 tons, against 1500 tons for the previous fortnight, making 7150 tons for the month. The total since December 31st last is 12,050 tons, and the quantity same time last year was 11,550 tons. Exchange 17 1/4d. Since our last issue we have been experiencing a most sensitive and at times a very irregular market. On the 17th inst. it became suddenly depressed, and a collapse of 2s. 6d. per ton took place, sales being effected at from £49 11s. 9d. to £48 11s. 3d. for cash, short dates, and up to three months' prompt, this latter being the lowest figure accepted during the fortnight. On next and following days a sharp recovery of 25s. per ton quickly followed, and on the 22nd instant the market returned to the highest prices paid. From this date prices varied between £49 17s. 6d. and £49 2s. 6d. for cash and short dates, and £50 and £49 2s. 6d. for two or three months' prompt. This morning, after a warrant of three months had been done at £49, and £18 15s. 6d. accepted for a short prompt, a good demand set in, influenced by the unexpected improvement in the fortnightly figures, and we close firm with business done up to £49 5s. cash and short dates, and £49 7s. 6d. for three months. New York cable advice yesterday quoted Lake Copper 11.50 to 11.62 1/2 cents. The total stocks in Liverpool, Swansea, London, and Havre are 30,729 tons, against 31,735 tons on the 16th ult. showing a decrease of 1056 tons for the fortnight, which with a decrease for the previous fortnight of 16 tons, makes the decrease for the month 1022 tons. The stocks include about 1000 tons of copper sold, but not yet delivered to smelters. The visible supply for the fortnight is 31,131 tons, against 37,340 tons on the 16th ult., showing a decrease of 1209 tons. The month's figures show a decrease of 844 tons. Refined and manufactured sorts are steady, quotations being—tough cake £52 15s. to £52 5s., best selected £53 5s. to £53 15s., Indian sheets £57 to £57 10s., strong sheets £56, and yellow matte sheets £54d. per lb.—Furnace material. Several transactions have taken place, but the only business allowed to transpire was a sale of 50 tons Seville precipitate, to arrive (about 75 per cent. produce), at 10s. 6d. per unit.

	Tons fine.	Tons fine.
Import of Chili copper during the past fortnight	394	against 750 same time last year.
Delivery of Chili copper during the past fortnight	624	" 314 "
Import of other copper during the past fortnight	1838	" 4913 "
Delivery of other copper during the past fortnight	2215	" 2909 "

The total imports of Chili and other copper into Liverpool and Swansea since January 1 have been 35,445 tons, and deliveries during the same period 50,747 tons fine; for same time last year the figures were 35,569 and 52,189 respectively.

Quotations are:

	To-day.	July 1, 1896.
Chili bars	{ £49 5s. cash	{ £49 15s. cash and {
" Ore	{ £49 7s. 6d. 3 months	{ 1 month, {
" Regulus or matte	{ 9s. 6d. to 9s. 9d.	{ 9s. 4 1/2d. to 9s. 7 1/2d.
Precipitate	{ 10s. 10 1/2d. to 10s. 1 1/2d.	{ 9s. 9d. to 10s.
	{ 10s. 3d. to 10s. 6d.	{ 10s. 1 1/2d. to 10s. 3d.
	{ July 2, 1896.	{ July 3, 1896.
Chili bars	{ £49 5s. 6d. cash and {	{ £49 7s. 6d. cash and {
" Ore	{ £49 11s. 3 months	{ £49 10s. 3d. 3 months {
" Regulus or matte	{ 7s. 9d. to 8s. 3d.	{ 8s. 9d. to 7s.
Precipitate	{ 8s. 6d.	{ 7s. 6d. to 8s.
	{ 8s. 9d.	{ 7s. 6d. to 8s.

Stocks of copper (Chilian and Bolivian) in first and second hands, likely to be available, we estimate at—

	Ores.	Regulus.	Bars.	Ingots.
Liverpool	10	—	24,703	193
Swansea	—	—	915	—
	10	—	25,618	193

representing about 25,323 tons fine copper, against 26,063 tons June 16, 1896, price of cash bars £19 15s. Against 25,451 tons fine copper, July 2, 1896, price of cash bars £21 5s. Against 33,745 tons fine copper, July 3, 1896, price of cash bars £23 7s. 6d. Against 30,450 tons fine copper, July 4, 1896, price of cash bars £24 7s. 6d.

	Tons fine.	Tons.
Stock of other copper contained in matte, foreign ore and Spanish precipitate	1580	against 7829 July 2, 1895
Stock of Chili bars, ingots, and barilla in Havre, including Rouen and Dunkirk	878	" 319 "
Stock of copper other than Chili in Havre and Dunkirk	1521	" 911 "
Stock of Chili copper abroad and chartered for to date	3552	" 3931 "
Stock of foreign copper in London	989	" 474 "

Tin.—Since our last market for cash Straits has been irregular, fluctuating between £20 15s. and £21 10s., closing to-day at £21 1s. 3d., Australian £21 5s., English £21 1s., and Peruvian £20 to £20 according to quality.—Sulphate of copper. Makers price £17 10s. spot and forward.—Lead during the past fortnight has been firmer, closing steadily at £11 to £11 1s. 3d. for Spanish, and £11 5s. for English.—Spelter. The market since our last has been quiet, closing dull at £18 2s. 6d. for ordinary Blislan brands.—Quicksilver. Since our last the market has been quiet at £5 9s. per bottle for Spanish.—Bar silver. Prices have fluctuated between 31 1/4d. and 31 3/4d. per ounce standard, closing to-day at 31 3/4d.—Antimony quiet, star regulus at £10 to £10 10s. per ton. Ore irregular about £3 to £1 10s. for 60 per cent. good quality and produce.—Bank rate of discount. The rate has remained at 2 per cent. since February 21, 1894.

**Messrs. HENRY BATH and Son's Copper Report,** dated July 2, has the following:—The Chili charters for the last half of June are advised as 650 tons. The latest exchange is 17 1/4d. The fortnight opened with sales at £20, but the price dropped immediately and £19 was accepted for three months on the 18th instant rising to £20 the following day. £49 was reached by the 23rd instant, but it again proved a turning point and £49 17s. 6d. was touched by the 26th instant. Free offers of forward copper then sent the price back, and the drop in the quotation for Lake copper at New York to 11 1/2 to 11 3/4 and then to 11 1/2 cents induced some selling down to £48 15s., but buyers coming in we closed firm last night at £49 2s. 6d. cash and £49 7s. 6d. three months, a premium of 5s. being once more established on forward copper. This morning the improvement has been carried a little further, closing £49 5s. to £49 5s. 3d. cash, and £49 5s. 6d. to £49 10s. forward. There has been less excitement about the market, and at the close there is more disposition to regard the position seriously. Taking it all round, consumption continues to improve. In fact there are signs of still further development which however may not become patent for a while, as the end of the half-year is the time usually chosen by manufacturers to close their works for purposes of stock taking, and their operations in consequence are restricted as much as possible. In spite of this the figures to date again show a marked decrease in both stocks and visible supply, bearing out the broad facts to which

we drew attention last fortnight. The price of Lake copper is now quoted 11 1/2 cents per lb., but it is doubtful if this slight decline in the New York quotation means much change in the actual price at which Lake copper can be obtained. The shipments for the month of June are advised as 9754 tons against 10,481 in May. The arrivals and deliveries at Hamburg, Rotterdam, and Antwerp during the past fortnight amount to about 1450 tons. Imports of American copper into England have been 1077 tons, and into France 405 tons, or 1482 tons against 1003 tons last year. Total actual deliveries for the fortnight have been 4562 tons against 2557 tons imports. Stocks have decreased 1005 tons. Total visible supply shows 38,280 tons against 37,435 tons last fortnight. No transactions in furnace material have been reported this fortnight.

England and France.	Imports.	Deliv'rs.	Stocks.	At Char-tered for supply.
Chili copper at Liverpool, Swansea and in France	809	1034	26,529	3700
Foreign copper in London, chiefly Australian and Japanese	300	158	990	1850
American copper at Liverpool, London, and Swansea	1077	1078	646	—
O'her copper at Liverpool & Swansea	405	1169	934	—
American copper in France	405	180	1217	—
Other copper in France	145	843	314	—

Tons fine copper during the fortnight	357	4582	30,730	5550	38,280
Against tons on June 17, 1896	4653	4669	31,735	5700	37,435
Against tons on June 2, 1896	4736	5771	31,751	5100	38,901

Total visible supply July 1	58,182	50,073	49,955	56,604	57,933
	1895.	1894.	1893.	1892.	1891.
	58,182	50,073	49,955	56,604	57,933

Price of Chili bars same date:—£42 6s. 3d., £38 7s. 6d., £43 7s. 6d., £44 15s., £55 7s. 6d., £58, £41 3s. 9d., £1 5s., £40 3s.					
1896.	1895.	1894.	1893.	1892.	
Tons	Tons	Tons	Tons	Tons	
fine.	fine.	fine.	fine.	fine.	

Imports from Chili and Bolivia from January 1 to date	10,259	10,318	9,979	10,291	9,927
Imports from America from January 1 to date	23,885	16,608	22,484	15,784	16,405
	1891.	1890.	1889.	1888.	1887.
	Tons	Tons	Tons	Tons	Tons
	fine.	fine.	fine.	fine.	fine.

Imports from Chili and Bolivia from January 1 to date	8,985	13,029	15,161	18,078	15,308
Imports from America from January 1 to date	16,152	13,197	12,198	18,749	7,081
The shipments to Europe from America from January 1 to date are 58,012 tons as against 33,444 for corresponding period last year.					
The shipments abroad from America are estimated at 2500 tons.					
Imports.—The arrivals from the West Coast have been as follows:—					
	Ores.	Regulus.	Bars.	Ingots.	Barilla.

At Swansea	—	—	—	—	—
Phidias (s) from Lota	—	—	151	—	—
At Liverpool	—	—	—	—	—
Gulf of Guinea (s) from Valparaiso, &c.	90	—	100	—	—
Milton (s)	—	125	—	100	—
In France	—	—	—	—	—
Phidias (s)	—	—	200	—	—
Milton (s)	—	—	125	90	—
	Tons	fine.	fine.	fine.	fine.
	215	—	676	92	—

Corresponding period of 1895.	—	—	750	—	—
	1894.	—	68	197	85
	1893.	—	48	540	50
	1892.	—	62	45	103
	1891.	—	—	—	173

Stocks.—We estimate the present available quantities of West Coast copper to be:—

At Swansea	—	Ores.	Regulus.	Bars.	Ingots.	Barilla.
At Liverpool	10	—	—	24,703	193	—
In France	—	—	—	910	280	145
	10	—	—	26,038	473	145

representing about 26,829 tons fine copper, against 26,354 tons on the 17th ult. July 1, 1895.

	July 1, 1895.	July 1, 1896.
" 40,770	"	"
" 34,090	"	"
" 35,115	"	"
" 31,495	"	"

Supply of West Coast copper may be estimated from the following figures:—

Actual stocks at Swansea, Liverpool, and in France	26,629
Afloat and chartered for at date of last advice per mail and cablegram	3,700
Total	30,329

against same date 1895, stock 40,770 afloat, &c., 3500=44,270

1894.	34,000	3500=37,500
1895.	35,815	3200=39,015
1892.	33,450	3900=37,350

Quotations for West Coast copper are as follows:—

	To-day.	July 2, 1896.	July 3, 1896.	July 4, 1896.	July 5, 1896.
Ores	9/ to 10/	8/6	7/6	8/7 1/2	8/9
Regulus	24/9 1/2 to 24/9 3/4	24/8 3/4	23/8 7/8	24/3 7/8	24/1 15/16
Bars	24/9 1/2 to 24/9 3/4	24/8 3/4	23/8 7/8	24/3 7/8	24/1 15/16
Ingots, Urmenia	Nom.	Nom.	Nom.	24/8 5/8	24/8 10/16
Precipitate	about 9/9	about 9/9	about 8/	about 8/3/4	9/3

For other descriptions we quote to-day:—Wallaroo nominal. Burra Burra nominal. Best selected about £54 to £54 10s. English Tough about £53 to £53 10s. English manufactured about £50. India sheets nominal about £56 10s. G.M.B. cop. £19 5s. to £19 6s. 3d. cash and £19 8s. 9d. to £19 10s. three months. Sulphate of copper, £18 to £18 10s. cash, £17 to £17 10s. forward.—Tin. Closing at £81 7s. 6d. cash, £82 three months.—Spelter. Quiet, £18. English about £18 7s. 6d. Biende of 80 per cent. is worth about £1 2s. 6d. and calamine about £1 5s.—Lead. Dull. £11. With silver 50 to 80 ounces about £11 5s. to £11 10s. Lead ore of 70 per cent. is worth about £5 per ton.—Pig iron. Closing quotations for Scotch pigs are 45s. 11 1/2d.; Middleborough, 37s. 1/2d.; hematite, 46s. 11d. cash.—Antimony. Quiet. Star regulus about £30. Ore £2 to £3 10s. for 50 per cent. good quality and produce. Crude about £14 per ton.—Quicksilver. Official price £6 10s., seconds quiet at 1s. 8d. to 2s. less.—Bar silver. 31 1/2d. per ounce standard.—Discount. The Bank rate remains at 2 per cent.

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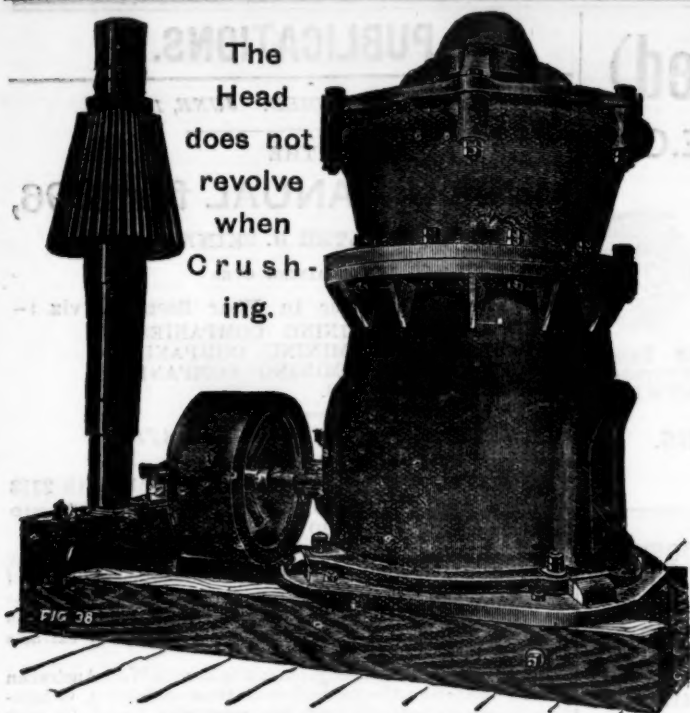
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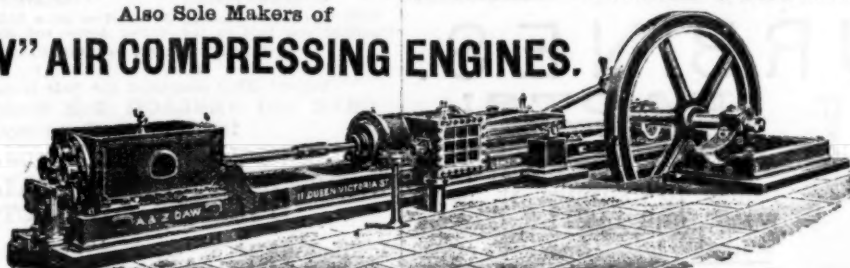
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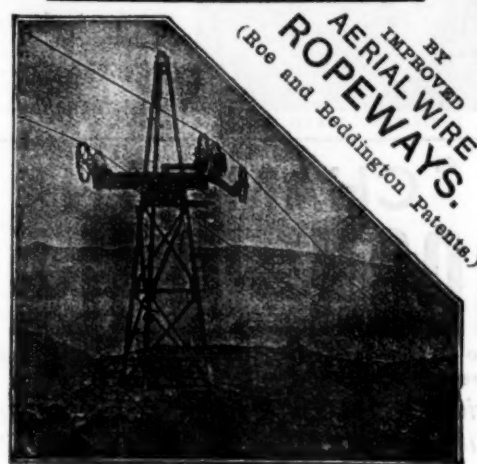
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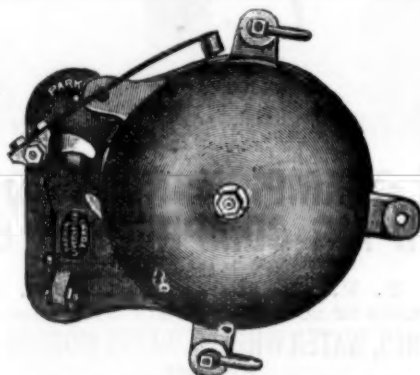
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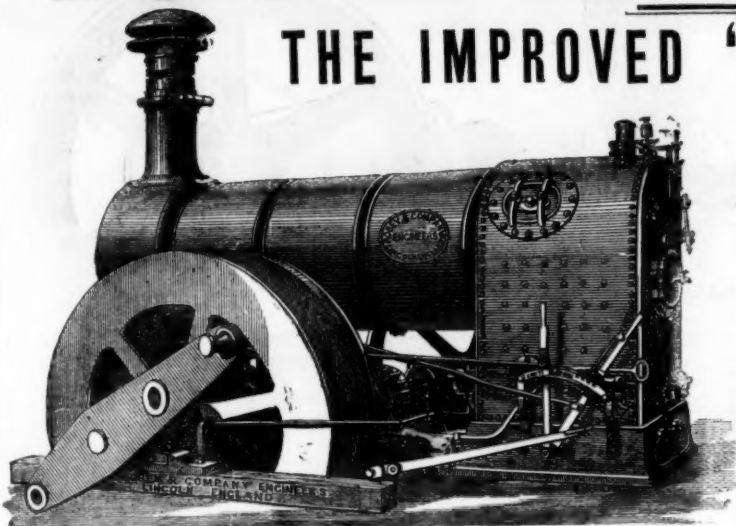
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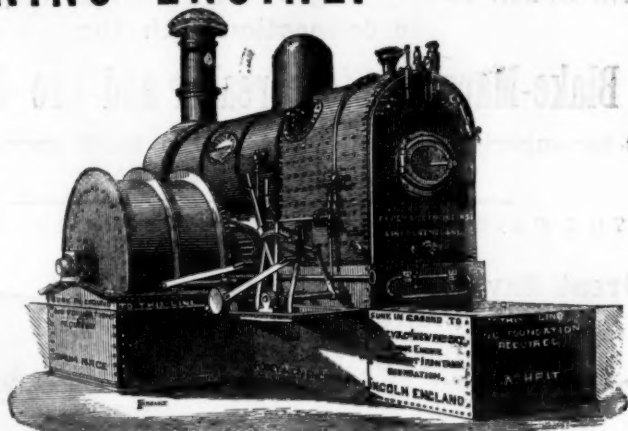
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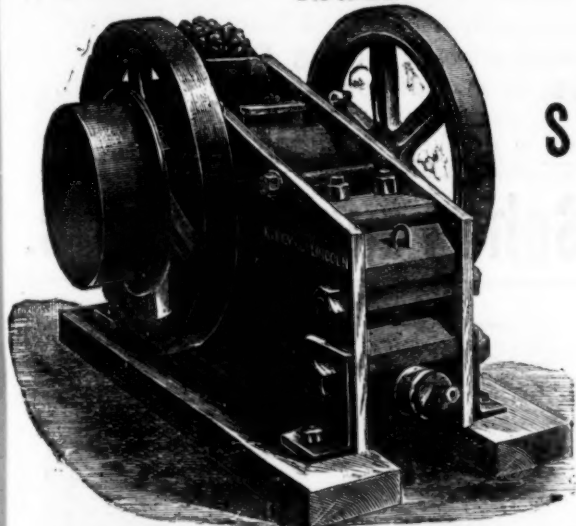


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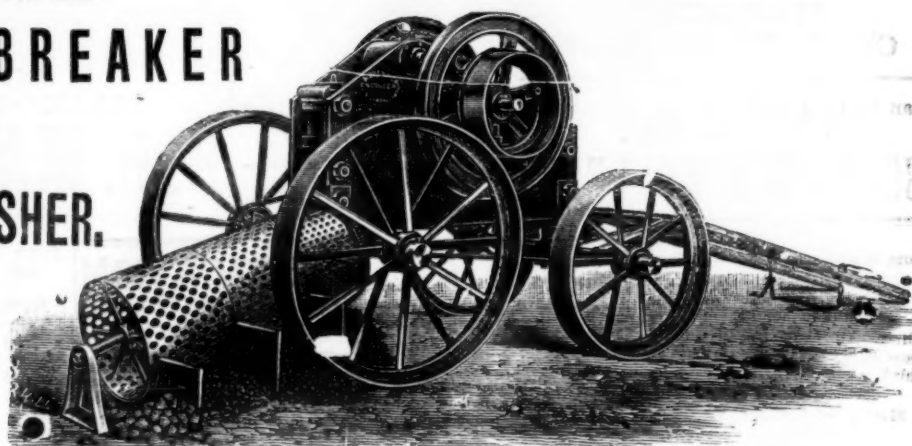
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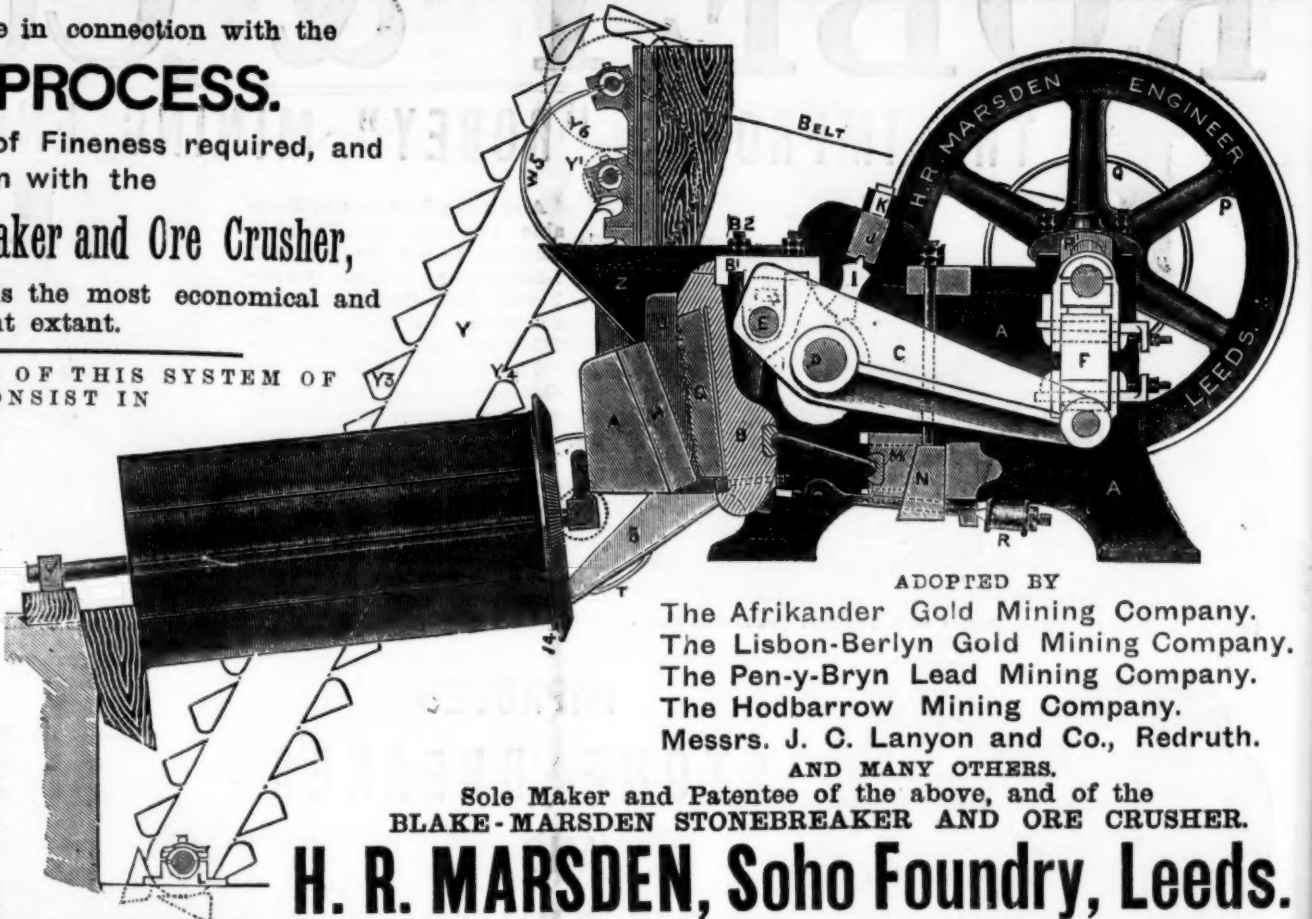
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